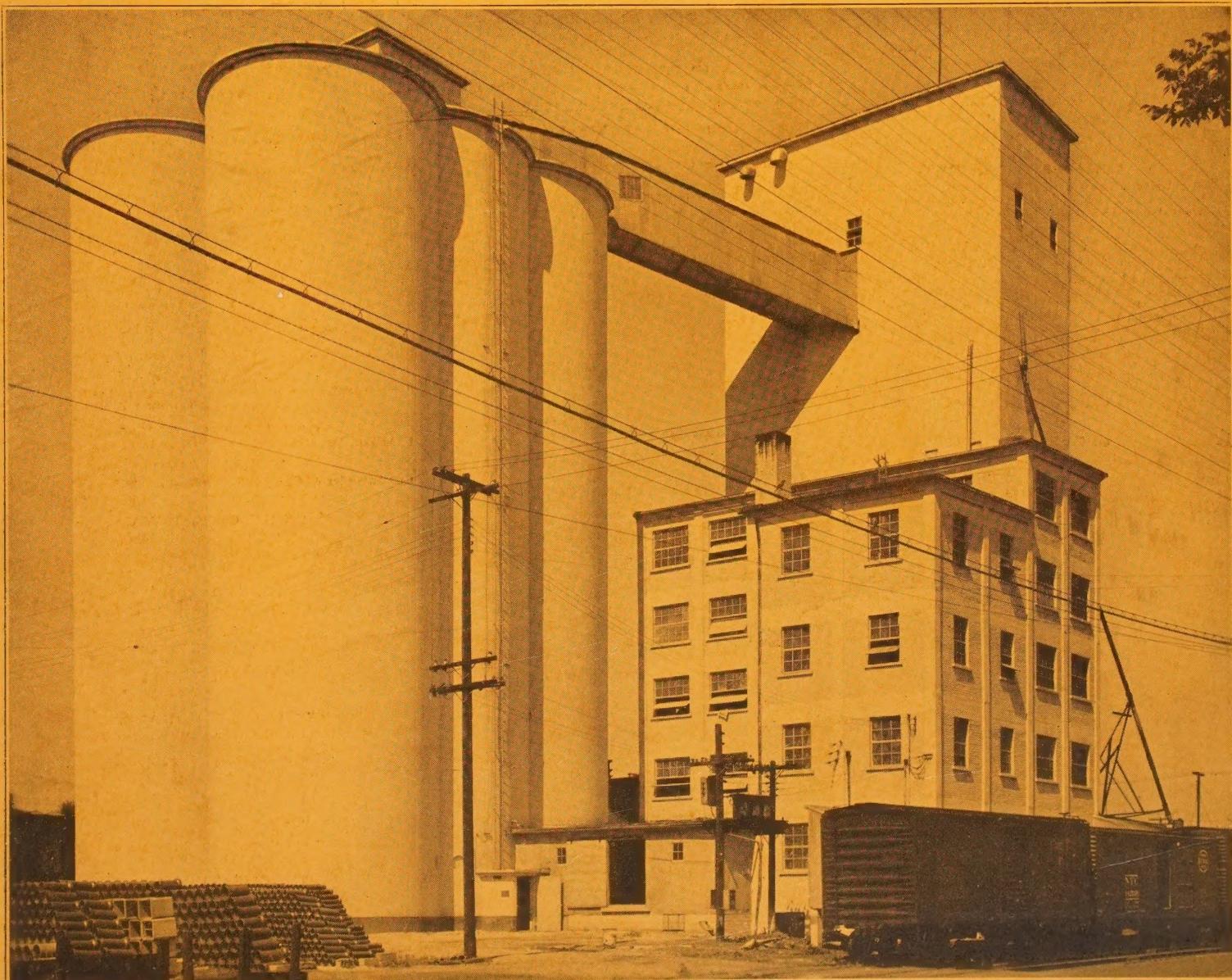


GRAIN & FEED JOURNALS

CONSOLIDATED

A Merger of Grain Dealers Journal, American Elevator & Grain Trade, Grain World and Price Current-Grain Reporter



Four Round and Five Interstice Bins of 275,000 bus. Capacity, Just Added to Old Grain Elevator of Marion Milling Co., Marion, O.
[See page 146.]

Directory of the Grain Trade

In Organized Markets Only Members of the Local Grain Exchange Will Be Listed

HAVING YOUR name in this directory will introduce you to many old and new firms during the year, whom you do not know or could not meet in any other way. Many new concerns are looking for connections, seeking an outlet or an inlet, possibly in your territory. It is certain that they turn to this recognized Directory, and act upon the suggestions it gives them. The cost is only \$10 per year.

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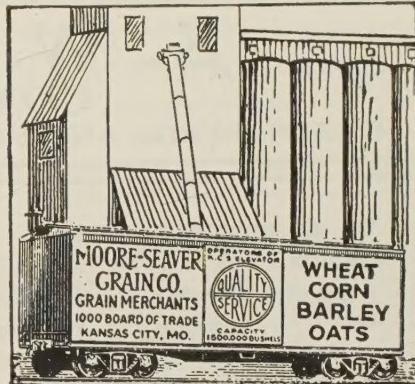
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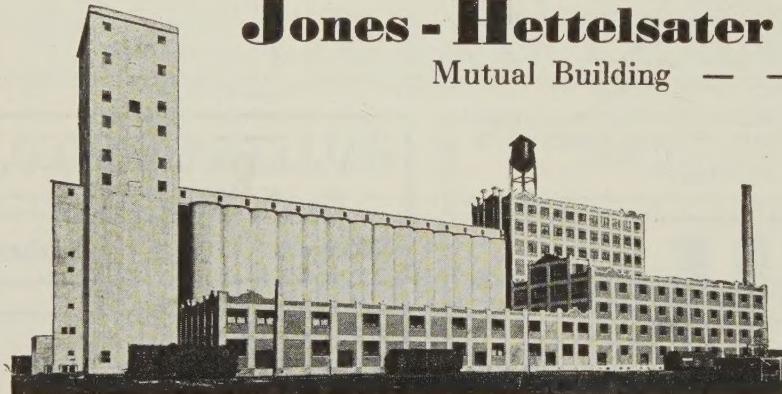
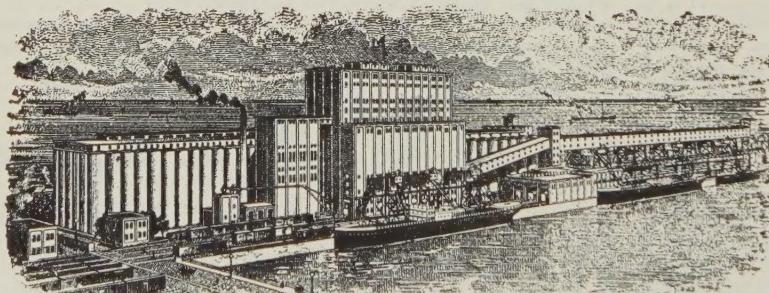
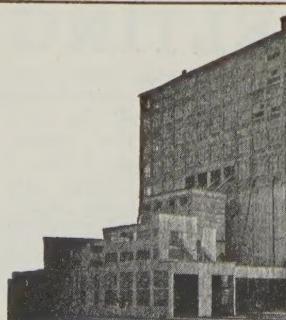
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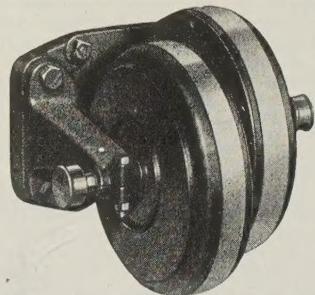
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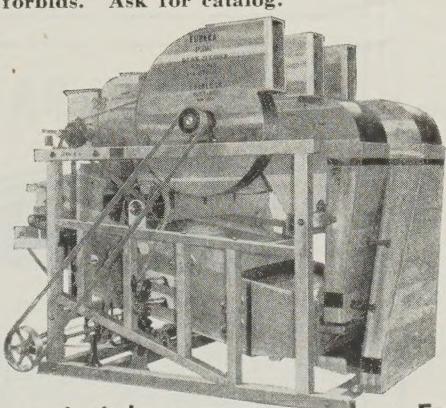
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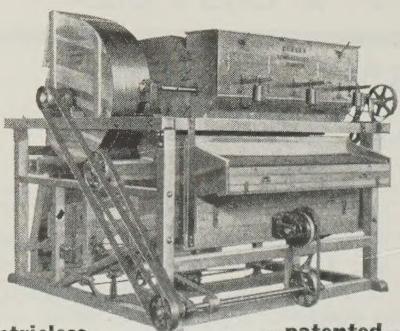


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Whenever there is a real opportunity of interest to the grain trade, it is usually registered in the "Wanted—For Sale" columns of the Journal.

HELP WANTED

WANTED—Machinery salesmen, familiar with the grain and seed industries; to sell new type seed recleaning machinery. Good commission and exclusive territories to competent men. 76Q12, Grain & Feed Journals, Chicago.

COMPETENT AND EXPERIENCED elevator managers, foremen, bookkeepers, auditors, second men and solicitors can easily and quickly be found through an ad in the "Help Wanted" column of the Grain and Feed Journals, Consolidated, Chicago, Ill.

SITUATION WANTED

COMPETENT elevator manager with 10 years' experience desires employment. Can give references. Write J. C. Lewis, Freedom, Okla.

JOB WANTED—Traffic manager; shipping room supt.; familiar with grain rates, transit and all other tariffs; 12 years' experience. 76Q11, Grain & Feed Journals, Chicago.

SAMPLE ENVELOPES

SAMPLE ENVELOPES—SPEAR SAFETY—for mailing samples of grain, feed and seed. Made of heavy kraft paper, strong and durable; size 4½x7 inches. Have limited supply to sell at \$2.35 per hundred or 500, \$10.00 plus postage. Sample mailed on request. Grain & Feed Journals, 332 S. La Salle St., Chicago, Ill.

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WHATEVER your business may be, it will find a ready market if advertised in the "Business Opportunities" columns of GRAIN & FEED JOURNALS, Chicago. 9,800 grain men look to these columns twice each month for real opportunities.

RAT EXTERMINATOR

RAT LUNCHES—Kills rats and mice without poison. Ready to use. Just lay them out. Endorsed by agricultural authorities. \$1 large package—\$3.50 a carton prepaid. Salesmen-Distributors wanted. Rat Lunches Co., Carroll, Ia.

Your RADIO MARKET Record

A boon to the grain dealer who keeps a convenient, permanent record of market quotations for ready reference.

This form provides convenient spaces for hourly quotations on Wheat, Corn, Oats, Rye, and Barley. A week on a sheet, and a year's supply of sheets in a book.

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Gentlemen:—In order to keep us posted regarding what is going on in the grain and feed trades outside our office, please send us the *Grain & Feed Journals* twice each month. Enclosed find Two Dollars for one year.

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Capacity of Elevator

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Formed by bending sheet aluminum, reinforced around top edge with copper wire. Strong, light, durable. The dull, non-reflecting surface of aluminum will not rust or tarnish; assists users to judge of the color and to detect impurities.

Grain Size, 2½x12x15½", \$2.00; Seed Size, 1½x9x11", \$1.65, at Chicago.

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MACHINES FOR SALE

HAMMERMILL—Direct connected; 40 H.P. Address Box 176, Sidney, Ohio.

CORN CUTTER & Grader—has motor—used very little. 76D6 Grain & Feed Journals, Chicago.

FOR SALE—Cornwall corn cleaner; one pitless corn sheller; shafts and pulleys. L. A. Perry, Clemons, Ia.

HAMMER MILL with 25-h.p. motor and all attachments. Priced to sell. Write 76D7 Grain & Feed Journals, Chicago, Ill.

FEED MIXER—one ton—floor level feed—has motor—good as new. Write 76D8 Grain & Feed Journals, Chicago, Ill.

FOR SALE—Complete feed outfit including 40 H.P. Hammermill, feed mixer, elevators, etc. Address Box 176, Sidney, Ohio.

FEED MIXER for sale, has motor, and a late machine. Need space. Will sacrifice. Write 76D5 Grain & Feed Journals, Chicago, Ill.

VERTICAL MIXER bargains, priced delivered; also re-built motor bargains, guaranteed same as new. Address Midwest, 728 Delaware, Kansas City, Mo.

FOR SALE—Rosco-Ajax Oat Huller; No. 2-A Jay Bee Hammer Mill; 25-bbl. Midget Marvel Flour Mill. All machinery used, but in good condition. Wolfram Grain Co., Brownsburg, Ind.

MONITOR—No. 4A; counterbalanced 4 sieve receiving separator, good condition. Reason for selling: have purchased larger capacity Monitor Separator. Maugansville Elevator & Lumber Co., Maugansville, Md.

FOR SALE—One 18 in. belt driven Attrition Mill Sprout-Waldron. 8-in. leather belt jack and shaft.

One motor driven 24 in. Attrition Mill Sprout-Waldron 2-20 H.P., 60 Cy., 440 Volt. new motors. Blissfield Co-operative Co., Blissfield, Mich.

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FOR SALE

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50 H.P. Type Y, Fairbanks-Morse oil engine. 40 H.P. No. 3, direct connected J. B. Hammermill.

Corn Crackers and Graders.

Send for complete list of equipment. Sidney Grain Machinery Co., Sidney, Ohio.

MOTORS—GENERATORS

ELECTRIC MACHINERY—Motors, M-G sets, Generators, Pumps, Compressors. Write for attractive quotations on your requirements. Save half on Guaranteed Rebuilt units. Specials—Totally Inclosed, 60 h.p. bb. Motor, 900 rpm; 2-7½ h.p., 1 at 1800 and 1 at 3600 rpm. Chicago Electric Co., 1331 W. 22d St., Chicago, Ill.

ALMOST ANYTHING YOU WANT can be promptly obtained through JOURNAL want ads.

MACHINES WANTED

WANTED—Good used seed cleaner. Standard Milling Co., Box 293, Lubbock, Tex.

WANTED—Corn and cob cleaners; 400-600 bus. Molasses mixers 3 to 5 tons. Address P. O. Box 104, Kansas City, Mo.

ENGINES FOR SALE

FOR SALE—Fairbanks-Morse Oil Engine; Type Y, 50 H.P. Address Box 176, Sidney, Ohio.

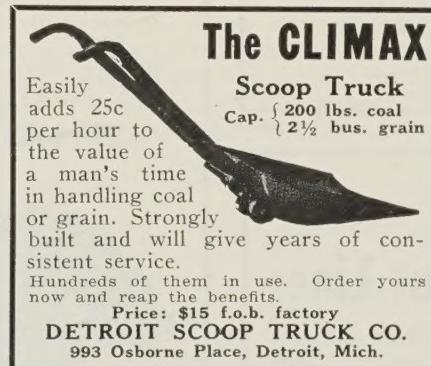
ANY KIND, ANY SIZE, Any Price engine, which is not in use, and which you wish to sell, will find many ready buyers if advertised in the "Engines For Sale" column of GRAIN & FEED JOURNALS. Try it.

SCALES FOR SALE

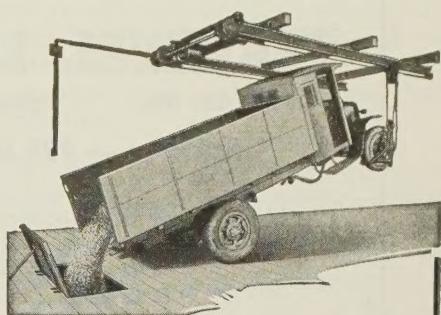
MOTOR TRUCK SCALES—All capacities. Also guaranteed used scales. Terms. Fuel burning engine, new, 25 H.P. \$250. Salesmen wanted. Bonded Scale Co., Manufacturers, Columbus, O.

STANDARDIZED Grain Testing outfit for sale, similar Fairbanks No. 11192; rebuilt, but will guarantee as good and accurate as new. \$50 f.o.b. Dallas.

TRUCK SCALES for sale—One 20 ton, 20' Howe, compound beam and steel, with or without Weightograph. One 20 ton 24' Howe with steel and registering beam. A1 condition. The Dillon Scale Repair Co., 2014 N. Lamar, Dallas, Tex.

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The above dump represents the outcome after years in the business of manufacturing of Truck Dumps. In the endeavor to make a dump which would fill the desires of hundreds of elevator owners, each having different ideas. This is why we can honestly say that we now have a dump that will satisfy 99% of unbiased grain elevator operators.

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60 miles north of Kansas City with same grain rate privileges. Center of wheat, corn, oats, barley and rye producing territory.

Chicago, Burlington & Quincy Railroad Co. trackage.



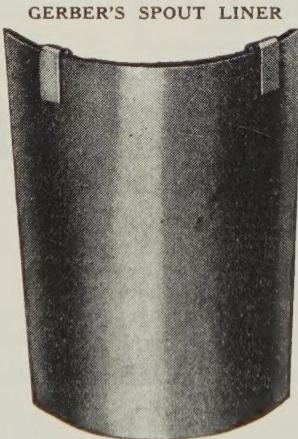
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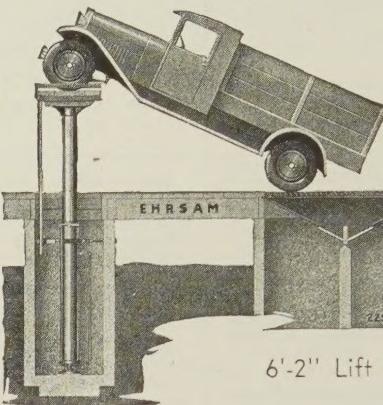
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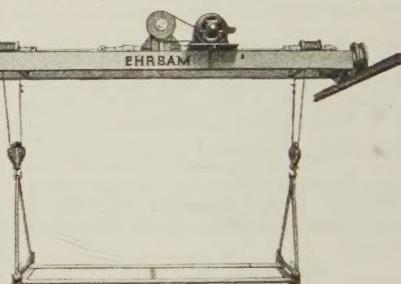


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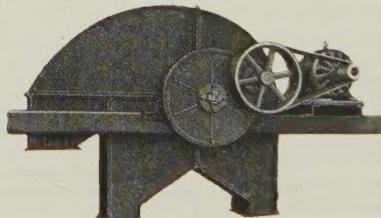
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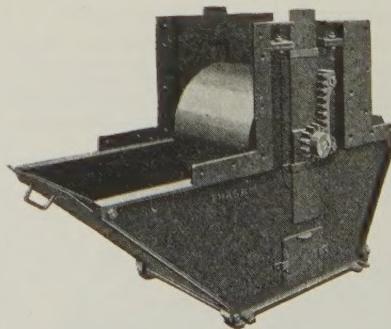
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GRAIN & FEED JOURNALS CONSOLIDATED

INCORPORATED

332 S. La Salle St., Chicago, Ill., U.S.A.

Charles S. Clark, Manager

A merger of
GRAIN DEALERS JOURNAL
Established 1888

**AMERICAN ELEVATOR &
GRAIN TRADE**
Established 1882

THE GRAIN WORLD
Established 1928

PRICE CURRENT - GRAIN REPORTER
Established 1844

Published on the second, and fourth Wednesdays of each month in the interests of better business methods for progressive wholesale dealers in grain, feed and field seeds. It is the champion of improved mechanical equipment for facilitating and expediting the handling, grinding and improvement of grain, feeds and seeds.

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To Foreign Countries, prepaid, one year, \$3.00.

THE ADVERTISING value of the Grain & Feed Journals Consolidated as a medium for reaching progressive grain, feed and field seed dealers and elevator operators is unquestioned.

Advertisements of meritorious grain elevator and feed grinding machinery and of responsible firms who seek to serve grain, feed and field seed dealers are solicited. We will not knowingly permit our pages to be used by irresponsible firms for advertising a fake or a swindle.

LETTERS on subjects of interest to those engaged in the grain, feed and field seed trades, news items, reports on crops, grain movements, new grain firms, new grain elevators, contemplated improvements, grain receipts, shipments, and cars carrying grain in transit, are always welcome. Let us hear from you.

QUERIES for grain trade information not found in the Journal are invited. The service is free.

CHICAGO, ILL., AUGUST 26, 1936

SOY BEANS promise a crop of good quality, and late rains will add much to the yield, so elevator operators who have preached diversification will reap a merited reward.

CORN at \$1.19½ for the September future and \$1.41 for the cash may be the culmination of the bull market as based on the drouth; but does not exhaust the possibilities of higher prices on account of expected inflation.

FILLING a steel tank with wood partitions or placing wood near to it robs the tank of its fire resisting property and often results in its complete destruction as is shown by Evans, Ill., tank illustrated elsewhere in this number.

THE PRESIDENT of the Saskatchewan Wheat Pool is demanding that the price of wheat be fixed at \$1.15 because according to his wild guess it costs more than a dollar a bushel to produce wheat in that province. We suggest another guess.

FIRE PREVENTION week has been set for Oct. 4-10 this year, but that does not justify your postponing the correction of known fire hazards and the provision of facilities for extinguishing fires in their incipiency until October. Do it NOW.

SO YOUR concrete dump sink leaks? Do you know why? Please tell us the cause. Many elevator operators find great satisfaction in self cleaning dry, smooth concrete pits, and they would tolerate nothing else. Tell us your experience.

THE Resettlement Administration has bot an area equal to the state of Rhode Island at \$5 per acre; but fortunately for operators of grain elevators it is not able to get good land in their neighborhood at that price to convert into forest (?) preserves.

IN PRICING barley bought from growers play safe by getting early information on samples from your terminal commission merchant. The price difference between feed and malting barley is larger than usual, so country buyers must take every precaution to avoid loss.

LATE RAINS have saved so much of the corn from the drouth, a bountiful supply of good seed is assured. The foresighted grain dealer will keep a vigilant lookout for desirable seed of the new or the old crop. All will command an attractive price next March.

ALL SMALL grains are so dry this season inexperienced operators of combines have broken much of the grain, so discounts are more numerous than usual. Chess, weedseed and sweet clover are also earning disappointing discounts. Careful screening will win pleasing returns.

RESTRICTION of free transit by the Interstate Commerce Commission is a threat to all grain handling plants established at locations dictated as most advantageous under the old regulations. It is hoped that the Commission will find some way to make exceptions in favor of vested interests already established.

IN ADVOCATING the policy of scarcity the former head of the AAA told farmers at Des Moines that "The farm implement industry in practicing the economics of scarcity produced only 30 million dollars worth of goods in 1933 as compared to 277 million dollars worth in 1929, a curtailment of 90 per cent in value due chiefly to volume. That is an enormous reduction of production, a thoro acceptance of the economics of scarcity." The fallacy of this argument is obvious. Manufacturers of machinery and steel do not believe in scarcity, but aim to fill all orders. Their exact adjustment of supply to demand can not be copied by farmers whose output is controlled by the weather.

THOSE who like to see the under dog getting the breaks will be pleased to learn that the Farmers National has a fat government seed contract and that the Minneapolis strikers who have closed 30 elevators are letting the Farmers National operate its elevator without any interference.

THE FIRST CAR of 1936 Texas corn reached Kansas City last Monday, graded No. 1 white and sold at \$1.26¾ a bushel. San Antonio shippers are credited with contracting the early delivery of large lots of white and mixed corn, so the corn growers of the Lone Star state will share in the benefits of the drouth along with the maize growers of the Argentine Republic.

UNDER the new hours the Chicago Board of Trade will open and close three-quarters of an hour later by the sun, the coming fall and winter, as compared with other years, a change welcomed by the grain brokers of Vancouver, tho not relished by Liverpool. The office girl will toil nearly an hour later; and the pit broker will miss the first race at the track.

NO CONCERN whose claim to handling 20 per cent of the grain received at a terminal market has been challenged can afford to keep stirring up the matter continually when it serves to call attention to the fact its business has been shrinking. For any official to have sponsored such a statement was a blunder in the first place. Keeping it alive is another blunder. Let it drop.

SEEDS differ notoriously in germination and freedom from weed seeds and no one can afford to buy them from a trucker who may have tampered with the official tags, giving the guaranty as determined by an analyst who alone is competent to pass upon their purity and viability. A trucker from Michigan going south for citrus fruit could easily palm off Rosen rye for the Abruzzi variety.

FARSIGHTED grain dealers of the winter wheat belt will see to it that their patrons sow clean seed of the best variety and treat all seed wheat for smut with the most approved chemicals. Both the dealer and the planter are directly interested in getting maximum yields from the planting of high priced seed and will urge the use of first grade fertilizer on every field. The early and perfect preparation of the soil will help, but at prevailing prices for wheat growers can well afford to take every precaution to increase their chances for a heavy yield of superior quality. While all farmers can not be expected to adopt the recommendations of their local grain buyer, enough should be induced to take ordinary precautions to justify the active interest of the buyer in surer and larger yields for his patrons.

The GRAIN DEALERS JOURNAL

REPEAL of the federal tax on sales of future grain would encourage speculative buying and help the wheat growers.

MAILING lists need correction in a year like this when the recovery of business has brought in new firms and made more than the usual number of changes in firms doing business at the country elevators.

THE MANY elevator improvements reported in our news columns are most encouraging; not only are elevator operators improving and modernizing their plants but they are increasing their storage and handling capacities and reducing their power costs thru the installation of improved drives and anti-friction bearings. The extra cost of running old worn out machinery forbids its continued operation.

AFTER READING about the tricks of truckers elsewhere in this number and learning it sometimes takes two men to watch a trucker, the grain elevator operator may conclude that doing business with a trucker is too much trouble to be worth while. When truckers crawl into the pit to monkey with the scale levers and enter the elevator to tamper with the automatic loading out scale, the limit of trickery seems to have been reached.

THE COMMODITY Act was interpreted by the Commission in the forms for application for license as floor trader. Finding some obscurity the Commission issued an interpretation of its interpretation; and to cap the climax the chief of the Commission adds a few lines of interpretation to the interpretation of the interpretation, thus: "This means, etc." Whatever requires so much interpretation must be far removed from horse sense.

POSTPONEMENT until Dec. 9 of the joint truck and rail tariff of the Great Western only delays a problem that the Interstate Commerce Commission must solve in the interest of co-ordinated rail and truck transportation. The Wells-Fargo, Adams, United States and American Express operating independently over the highways have been coordinated as one with the railroads. Why should not ALL highway common carrier transport coalesce with the railroads?

THE CANADIAN Ministry of Defence insists, "There is no reason why grain elevators should not be constructed under ground." The construction might present no great difficulty, but the operation and maintenance would. The temperature of underground storage would result in excessive heating of the grain and the propagation of weevil. Keeping water out of the elevators or fighting fire in the elevator would be next to impossible and an explosion of grain dust would prove all relief agencies to be helpless.

DRASTIC requirements by the Interstate Commerce Commission that highway carriers carry three kinds of insurance may be welcomed by grain merchants as tending to put the truckers out of competition as buyers of grain, but it would be better to take the burdens off the railroads to enable them to haul cheaper. The railroads are paying taxes to maintain the highways used by the truckers and to support the schools in many counties where passing truckers contribute nothing.

CURRENT quotations on soybean oil meal mean nothing when the mills have none to sell, as at present. The boatloads of soybeans that went out of Chicago for export a year ago all would have remained in Illinois had the crushers guessed at the demand that was to spring up for the meal. Had there been a hedging market as in wheat, the foreigners might have been satisfied with the purchase of a future, leaving the beans in a Chicago elevator where they could later have satisfied the domestic demand.

THE MINNEAPOLIS elevator strike is the legitimate fruit of a gubernatorial policy of encouraging mob violence. Abetted by the authorities, the teamsters are in control; and unless the operators of the elevators yield to unreasonable demands their houses may remain closed indefinitely. There is a limit to the concessions that can be made, since the elevators of the Twin Cities are in competition with elevators at other terminals where the police power prevents mob violence. The lawless can not strangle the employers without hurting the employees.

THE FRENCH Parliament, not satisfied with the failure of the Government in every recent attempt to control the marketing of wheat, enacted a new wheat board law at its final session designed to control the marketing of domestic wheat. French millers and farmers have been so disgusted with the impractical regulations of the wheat trade that much of each crop has gone into consumption through bootleg channels. The politicians seem to have neither understanding nor respect for economic laws, so handicap rather than help farmers to market their wheat efficiently.

IF WAR catches America with empty granaries, remorse will dog the bureaucrats responsible for the policy of scarcity. Already Washington is trying to think up some way to continue paying wheat and corn benefit checks to wheat and corn growers without requiring them to continue the policy of scarcity, but to go full steam ahead. Much is to be said in favor of full production of grains. The railroads would have more paying freight, the elevators would earn storage, and most important argument of all, Sec'y Wallace would have an excuse to put into effect his pet ever-normal granary.

Complying with Robinson-Patman Law

Commentators on the newly enacted Robinson-Patman Act lose sight of the fact this measure was not drafted by the brain trust nor by the Washington bureaucracy. The Frankfurter hot dog boys that infested the departments in the heyday of the N.R.A. did not work into the law their conceptions of constitutional power since knocked out by the Supreme Court.

The promoters of this legislation were business men. They had worked on it long before the A.A.A. or N.R.A. ever were heard of, and sought to accomplish their purposes along lines strictly within the constitution.

The reader who wishes to understand this law that the Federal Trade Commission seems to find it necessary to interpret can do so most readily by imagining himself to be a retail grocer and that this law was enacted expressly for his benefit to prevent the manufacturer of sundries from selling to the operator of a chain of 38,000 stores at a less price than to himself, by any cunning device of advertising allowance, commission or rebate. The law does just that.

The complications in the law seeming to require interpretation arise from the fair minded purpose of the drafters to make all manner of exceptions to protect sellers in making different prices to different customers under conditions legitimately warranting different prices.

The Federal Trade Commission has offered its opinion that if Marshall Field & Co. advertise an article and the advertisement is read by a person in the state of Indiana who travels to Chicago and buys the article there and carries it away the sale is an interstate transaction subject to the law. Under such a far-fetched interpretation the merchant would have to ask the same price of all patrons buying that item, altho he never shipped the article across a state line.

In hitting at the big chain store organizations the wholesale and retail grocers have stirred up a lot of trouble for merchants in other lines who are subject to the Act, which must be in general terms to be constitutional.

A grain dealer buying side lines that may be construed to be in interstate commerce and discovering that some one of the thousands or more buyers from that same source has bought at a lower price, freight, etc. considered, will be in a position to figure what the difference amounts to in his favor and make claim against the seller for the difference. If the claim is legitimate the seller must settle, or run the risk of \$5,000 fine or a year's imprisonment.

However none will know the permissible application of the law until a multiplicity of interpretations have been crystallized by the courts.

New Blunder in Government Seed Handling

It passes all understanding why the bureaucrats having in charge the purchase of seed for relief (?) of the farmers should deprive themselves of the experience of those who have been distributing seed for a lifetime.

Government seed distribution in the Northwest came in for severe criticism a few years ago. At that time many farmers could not get seed from private concerns because they were too poor a credit risk; and the same individuals could not get seed from a government seed agency because they were not poor enough. Some thought they were going to get government seed already distributed to their local grain elevators, but were disappointed and their acres went unseeded. This seed within a year was shipped back by the government from the country elevators to Minneapolis and sold to be made into flour, completing the fiasco.

This fall the government is embarking in what promises to be an even larger seed operation; and right at the start ties up its seed purchasing with a concern that has dissipated its capital in the grain business and needs several million dollars of taxpayer's money to keep afloat as a going concern.

The contemplated deal will not bear the analysis that hard headed business men give to any transaction, however small. The cost of seed purchased privately will exceed buying done under open competitive conditions thru customary trade channels. The resulting higher price and the higher handling charges will make the government sales price next spring so high that the growers who intend to pay for the seed, and to repay private merchants their seed loans will buy the lower priced seed offered outside of the government agency, even tho it may be of poor quality, defeating the purpose of government aid.

It is believed that the seed procured in the proposed manner will necessarily be sold at a loss and the corporation chosen to handle the seed has assurances in advance that it will be protected in any event, all loss falling upon the Farm Credit Administration making the loan for the purchase of the seed. Country

grain elevator operators are as much interested in their patrons getting good seed as the farmers and it behooves them to have all seed thoroly cleaned and tested before it is delivered.

The Risks of Ownership

Dealers in grain have always recognized the hazards of ownership and tried to protect themselves from the risks of fire, tornado and wind by insurance in a well managed insurance company. Dealers of experience have learned that the vacillations of the market often wipe out their margins of profit, so they strive to protect themselves against falling values by selling for future delivery.

The farm agitators and bureaucrats seem to be incapable of recognizing that selling for future delivery affords the only protection obtainable for owners of grain from losses occasioned by declines in market values. The farmer, the grain dealer, the miller, the maltster, the distiller or brewer by selling on an organized exchange transfers the speculative element in his grain to the pit trader or his customer for a small commission.

So long as the owner of the grain carries all the risks of ownership, the agitators raise no objection, but the minute he transfers his risk of decline in market value to central market buyers, the agitators shout, "Gambler! Speculator!" and denounce those willing to assume the risks of ownership as unworthy. The trouble is that the bureaucrats feel that they must malign and traduce the speculators in order to justify their rigid regulation by the government and provide more siccures for the lazy.

It is not necessary that a fresh lot of grain shall be provided each time the risk of ownership is transferred to a new trader, and there is no valid reason why the second, third or fourth owner of the risk should be denied the right to unload it on someone else.

All the laws and regulations in the world will not reduce the risks of ownership one bit, but the more the traders are handicapped with unreasonable limitations the less accurate will be the values reflected in the markets. Free and unrestricted trading is the surest route to true values.

Discharge of Manager Without Cause

Henry A. Marquardt was granted a reversal of the district court decision against him by the Supreme Court of Minnesota, May 8, 1936, in the suit by the Danube Farmers Elevator Co., Danube, Minn., to recover \$1,516.26, alleged to have been appropriated by Marquardt.

Marquardt made counterclaim for \$10,000 on account of slander, stating that during his 21 years as elevator manager his honesty and integrity had never been questioned. Also he brought suit to recover \$600 due on a balance of a year's salary at \$75 per month after he was discharged June 20, 1934, without cause on a claim he was short in his accounts.

Bank Not Liable for the Grain Buying Agent's Fraudulent Checks

Townsend, agent at Jet, Okla., for the Choctaw Grain Co., made out checks in regular form payable to farmers in the vicinity when in fact no wheat had been purchased.

Townsend forged indorsements on the checks and sent his son, 12 years old, to the bank to get the money. The First State Bank at Jet sent the checks to the Oklahoma City bank, which paid them after the Choctaw Grain Co. had compared the amounts with the (false) reports of grain bought sent in by Townsend to see that they corresponded.

When the Choctaw Grain Co. discovered the fraud it brought suit against the Bank of Jet for its statement on the check "Previous indorsements guaranteed," but the Supreme Court of Oklahoma, on Jan. 14, 1936, ruled in favor of the bank, since the agent was authorized to draw and sign checks. Such checks when agent has no intention to deliver to persons named therein, are subject to the same rule as if fictitious names were used therein, and are payable to bearer without liability of the bank to the principal for indorsements of such bank.—53 Pac. Rep. (2d) 579.

State Warehouse Commission Not Liable for Insufficient Bond

Sam Dickey stored wheat in the elevator of the Carl Cassidy Grain Co. at Frederick, Okla., and on failure to recover the value brought suit against H. B. Cordell, state warehouse commissioner, and the Maryland Casualty Co., surety on Cordell's bond, alleging Cordell had been negligent in requiring only a \$3,000 bond of the grain company that had as much as 6,000 bushels of wheat in store.

The rule adopted by the State Board of Agriculture in January, 1927, provided that the amount of the bond required shall be fixed by the commissioner, but in no case shall be less than \$3,000.

Rule 8 provided "it shall be the duty of the commissioner or his agents to check up the contents and records of each bonded warehouse as often as is necessary in the opinion of the commissioner."

The Supreme Court of Oklahoma, however, on Mar. 3, 1936, decided the commissioner was not liable, since "in the absence of malice, oppression in office, or willful misconduct, public officers cannot ordinarily be held liable for mistaken exercise of discretion, or error of judgment in the performance of official duties."—55 Pac. Rep. (2d) 126.

Brokers, buyers, and sellers, splitting commissions in violation of the Robinson-Patman Act are liable to heavy penalties.

Courage and Perseverance

have a magical talisman, before which difficulties disappear and obstacles vanish.

—JOHN QUINCY ADAMS

Letters from the Trade

[The grain dealers' forum for the discussion of grain trade problems, practices and needed reforms or improvements. When you have anything to say of interest to members of the grain trade, send it to the Journals for publication.]

Crops of Mexico and Guatemala

Grain & Feed Journals Consolidated: After the seed conventions at Dallas, I spent two weeks in Mexico City and surrounding territory. The Agricultural Department there is very interesting. I was shown all types of corn and other grains and it is really wonderful to note the many types grown there. Coffee and corn are the big crops. Bananas and coffee are the two big items exported.

Corn, I was told, is a good crop and from observation it would seem so. It is well eared and is about at the same stage of growth as corn in Southern Indiana and Illinois. Barley is a small crop and imports are required, especially for malt. Because of the rate of exchange, the peso equalling about 26c, everything is comparatively cheap.

The snow capped mountains and Mexico City with over 7,000 feet elevation is delightful during July. During July and August it rains every day for an hour or two, so there is no shortage of moisture for the crops.

The new highway from the States to Mexico City was opened while I was there. Many American tourists drove down. The highway is very good, but still some danger of landslides.

A Chicago man, who has been in Mexico twenty-five years, says "Old Mexico" is gradually disappearing. There still remain, however, many quaint customs and interesting people.

Guatemala crops are similar to Mexico. In rural sections the buildings are better. Few beggars are seen in either country. Here the rate of exchange is the same as the United States. Bananas selling for about 25c per bunch. The ship we took from Puerto Barrios to the United States had 55,000 bunches. A ship was loading the following day with about the same amount.

You will never regret a trip to these two countries. The plane trip from Mexico City to Guatemala is ideal, with a view of the Pacific Ocean included.—L. M. Smith, of Seed World, Chicago.

Controlling the Truck Peddler

Grain & Feed Journals: The lines are rapidly drawing tighter on the activities of the truck common carrier and the parasite known as the nomad truck peddler. The rates, routes and responsibilities of all common truck carriers must be definitely prescribed and defined by law before we meet the elementary requirements for the protection of rural and town values, the preservation of our highway and the safety of the traveling public.

The Associated Southwest Country Elevators representing over 8,000 independent and cooperative elevators in ten states of the west and southwest and a like organization covering five spring wheat states of the northwest are heading the vast movement to enact needed legislation for a fair and uniform control and direction of the intra-state truckers to supplement and harmonize with such regulations and laws promulgated by the Interstate Commerce Commission to govern truckers engaged in interstate operations.

Committees are at work enlisting assistance from men engaged in other lines of business equally interested in the transportation problems, like the coal, hay, lumber and fruits and vegetable interests. They are also sounding out candidates for the legislatures as to their attitude on the question of effective control. The situation in each state must be surveyed to

determine needed legislation and see that proper bills are prepared and introduced in the legislatures this winter.

In Nebraska we follow the leadership of the Nebraska State Railway Commission. It will follow up its order for certificates of convenience and necessity with further actions relating to safety and to rates. These things will come along in good time. Then what we lack to make the system effective will be apparent and the Commission will move to supply the lack probably by legislative action and in this we can as elevator men function quite actively. We appeal to all grain men to support the work ahead so that we will have better protection for our business in 1937.—J. N. Campbell, sec'y Nebraska Grain Dealers Ass'n.

A grain ticker service is in operation at Springfield, Ill., fair grounds this week and will be installed at Des Moines from Aug. 26 to Sept. 4, the period of the Iowa fair. At Lincoln, Neb., Sept. 6-12, or at Hutchinson, Kan., Sept. 19-25, the quotations will be obtained by special leased wire and will be chalked upon the blackboard. At each of the four fairs, the Board of Trade will present a dioramic display telling the story of the movement of grain from the farm and country elevator, thru the exchanges, to processors and exporters, and to the markets of the world.

Effect of Robinson-Patman Price Law

There will follow from this law a revolutionary decentralization and relocation of industry. Mass production in highly specialized centers will give way to series of smaller factories. Mass distribution will disappear with mass production. Labor and population congestion will break up in the diffusion of industry. Property values, mortgage and other securities will be revalued. Rents and tax ratables will be reduced.

Prices will become factory prices and the goods produced will accumulate transportation charges as they move outward until it becomes cheaper to produce them somewhere else. Thus regional production and distribution areas will be created and industry will be relocated within these areas, taking the working and service population with it.—Newton B. Gaskill, for five years a member of the Federal Trade Commission.

New Storage Tanks for Ohio Mill

Four 28-ft. tanks and five intervening bins all 106 ft. high have recently been completed for the Marion Milling Co. at Marion, O.

The mill, a 4-story brick and concrete structure, already has a reinforced concrete grain elevator equipped for cleaning and weighing. The new storage, of 275,000 bus. capacity, receives and loads out, but all materials received must go thru the old elevator with which it is connected by a gallery extending over the mill to the old cupola where the grain is cleaned and weighed.

A portion of the storage is leased by the Old Fort Mills for the storage of soybeans used in the manufacture of soybean oil meal.

All conveyor belts are 24 inches wide, while the sheet metal, transmission machinery and motors were supplied by the J. B. Ehrsam & Sons Mfg. Co. The building was designed and erected by Chalmers & Borton.

See illustration on outside front cover.

Indiana Farm Buro Must Pay State Sales Tax

The Appellate Court of Indiana on June 6 in the suit by the Jasper County Farm Buro against Wm. Storen and others as members of the Board of Department of Treasury of Indiana held that the farm buro was obligated to pay the state sales tax known as the Gross Income Tax.

The Court said: The appellee Farm Buro contends that the exemption clause of the above act (Acts 1933 c. 50-7) provided an exemption to them in that they were an agricultural organization not operated for profit and, claiming further, that the statute under which they were organized, being the co-operative marketing act of 1925, provided that ass'n's organized under the act should "be deemed 'non profit' inasmuch as they are not organized to make profit for themselves as such or for their members as such, but only for their members as producers." The appellee was, as their manager testified, a purchasing organization and that it was devoted practically wholly, as the corporate purposes indicated by the statute provided, to supplying "to its members machinery, equipment or supplies," and that it did not engage in the co-operative marketing of products of its members.

The appellee was organized and issued preferred stock in the amount of \$3,550, which at the time of the trial had been reduced to \$1,550, which was outstanding and upon which dividends of 6 per cent per annum were paid. From their incorporation to date, they engaged in selling gasoline, kerosene, oil and other lubricating materials, seeds, feed, fertilizer, binder-twine, salt, and other miscellaneous supplies to anyone who desired to purchase from them. Their business was conducted in a small county seat town and most of it was with farmers.

At the close of their fiscal year the status of the business was determined by taking the difference between the cost to the appellee and the sale price to the purchasers. This left a balance which the appellee says is a saving. This was passed on to the patrons in the form of common stock certificates. The individual purchaser was issued, upon each \$5 profit that his purchases warranted, one share of common stock. This stock was issued not only to appellee's stockholders, but to any person who patronized the appellee.

Of course, at the outset it is hardly necessary to say that all exemption statutes, where there is any ambiguity, must be strictly construed against one seeking an exemption. The Gross Income Tax Act provides: "There are, however, excepted from the provisions of this act * * *(b)" members of "agricultural and horticultural societies not operated for profit." Provided, however, that this exception shall apply only to companies, organizations, corporations and/or societies named in this subsection which are not organized for profit, and no part of the income of which inures to the benefit of any stockholder or other private individual." (Our italics.) Section 7. Since the parties hereto are unable to agree on the meaning of the language of this section, it is fair assumption that it is ambiguous.

Here the appellee purchased supplies which they believed would be readily salable in their community without orders for the purchase of any of them from any prospective patron. They were sold to the public generally at a price comparable with the prevailing market price in that community. The difference between cost and selling price was distributed to the patrons in the form of common stock in the appellee. The primary question to be determined here is whether or not this difference in income which inures to the benefit of any stockholder or other private individual.

The appellee contends that even tho there is some income which inured to the benefit of private individuals who were not members of the appellee association, that this was purely incidental to the main purpose of the act under which it is incorporated and should not defeat the express purpose that it should be "deemed a non-profit organization," but they as readily agree that it is not what an organization is deemed to be, but what it actually is that controls.

Of course, it might be altogether possible to organize under the Agricultural Marketing Act so as to come within the exemption, but the question here is whether or not the organization as operated comes within the exemption, and since this must receive a strict construction, the fact alone that a part of the income inures to the benefit of private individuals not members of the association is sufficient in and of itself to prevent the exemption from extending to the appellee.

Whether or not this was "income which inures to the benefit" is decisive of the appeal here presented. Generally speaking, income is defined and considered by the public generally to be all that comes in, and, in the absence of a contrary intention, we must assume that the Legislature

in adopting this act used the word in its ordinary meaning.

Income is a generic term and is all-inclusive, being broad and comprehensive. However, since its specific meaning must be determined from its use, the act itself indicates that it was intended to be used here, as elsewhere thruout the act, as all-inclusive.

The act is known as the *Gross Income Tax Act*, *gross* having been defined to mean all. The act (section 2) provides that there shall be imposed a tax "measured by the amount or volume of gross income" and the term "gross income" is specifically defined in the act (section 1(f)) to mean "the gross receipts of the taxpayer received as compensation" and that "derived from trades, business or commerce, and the gross receipts proceeding or accruing *** and all receipts" and further with the evident expressed intention of the idea that the word "gross" should include everything added, in another section (in the classification of rates) that the tax shall be imposed upon the "entire gross income." Section 3.

Thus it is evident that the result intended to be accomplished by this act was the taxation of the "entire gross income" of those not specifically exempted. As further evidence of the intention of the Legislature that the exemptions were to be strictly limited, it provided that the exemptions should only apply to specifically enumerated organizations not operated for profit and no part of the income of which inured to the benefit of any stockholder or other private individual. Section 7.

The profit or any gain made as a result of the carrying on of a business of buying and selling has in recent years, under both federal and state net income tax acts, been held to be income. The gain made here was made in the conduct of a purely commercial business which consisted of making purchases and sales. The difference in the cost of the appellee and its sale price to the purchaser was a profit, gain, or income and this inured to the benefit of the patrons of appellee in the form of \$5 common stock certificates when the amount of business done by appellee and patron warranted such margin of profit. The undisputed evidence was that this stock certificate had some value, consequently it was a gain or profit or income inuring to the benefit of the stockholder and other private individuals as well. The appellee contends that this was a saving to the stockholders of the appellee and should not be classed as income. But this enhanced their total wealth, and whether it be called savings, gain, income or by any other name, it still renders the appellee liable to the tax intended by the Legislature.

The burden of establishing that they were entitled to an exemption was upon the appellee and no doubt must be resolved in favor of the tax rather than the exemption. In the absence of a clear showing that they were entitled to the exemption, it must be denied.

The judgment of the Marion Superior court is reversed with instructions to vacate the judgment entered and render a judgment declaring the appellee to be subject to the payment of the gross income tax.

The Farm Buro has 100 days in which to appeal. Meantime the ass'n's are paying the tax into a fund which is impounded.

The world production of durum wheat during 1936 is expected to be the smallest in many years, according to the Buro of Agricultural Economics. The 1936 crop in the four Mediterranean producing countries is estimated at 86,347,000 bus.; compared with 105,211,000 bus. in 1935 and with the 1930-34 average of 110,520,000 bus. The 1936 crop in the United States is placed at 9,610,000 bus., compared with 22,957,000 bus. last season and with the average of 28,562,000 bus. for 1930-34.

Michigan Bean Jobbers to Meet

The 44th annual convention of the Michigan Bean Jobbers Ass'n will be held Sept. 11-12, at the Hotel Fort Shelby, Detroit, Mich.

The meeting will open at noon on Friday the 11th, with a luncheon, followed by the first business session. Several good speakers have been engaged for the afternoon.

Election of officers and other ass'n business will occupy the Saturday morning session.

Saturday afternoon the ass'n will attend in a body an anticipated exciting big league baseball game between the Detroit Tigers and the New York Yankees.

The com'ite for all arrangements are Ward King, Port Huron, chairman; K. P. Kimball, Lansing, and Raymond Smith, Lake Odessa.

Milwaukee Preparing to Entertain the Grain Trade's Annual Convention

A novel mixture of business and entertainment is assured for the Fortieth Annual Convention of the Grain and Feed Dealers National Ass'n at Milwaukee on Oct. 12 and 13, according to word from that city following a conference between officials in charge of the convention arrangements.

The annual convention of grain and feed men this year is to be two days, instead of the three-days convention of 1935. But a wide variety of meetings promises a convention packed with action. The general sessions will be but three in number, on Monday and Tuesday mornings, and on Monday afternoon, but there will be a number of special breakfasts, luncheons and conferences which visiting members will want to attend and which will bring out many of the high lights of the convention.

Milwaukee hosts are planning a novel entertainment and recreation program. Tuesday afternoon will be the annual "golf meet," but during the same afternoon there will be recreation and sight-seeing trips such as only Milwaukee can offer. Late Monday afternoon and evening also will be reserved for special entertainment features in Milwaukee, and the grain and feed men of that city will present the big annual banquet on Tuesday evening.

The convention program proper has three sessions, each with a definite topic. Monday morning's session will be devoted to "Legislation and the Grain Trade." On Monday afternoon the general subject will be "Problems of the 1936 Drouth," and on Tuesday morning the convention will hear a condensed discussion of "Trucking Problems." From acceptances now reaching the St. Louis headquarters of the Grain and Feed Dealers National Ass'n, these program sessions will be conducted by men of national prominence and will draw wide interest.

At this time it seems certain that a "barley grading school" will be held on October 11, the day previous to the opening of the convention. This school will be conducted by experts of the federal department and by specialists they may call in from the trade.

Some of the breakfast sessions (from 9 a.m. to 10:30 a.m.) will be as interesting to many of the delegates as will some of the general convention sessions.

Elevator association men will meet for breakfast on Monday morning, and at the same time there will be a "members' breakfast" with some novelty entertainment that will get members acquainted in a hurry.

On Tuesday morning there will be a breakfast for editors of grain and feed trade journals, another for the resolutions committee of the convention, and breakfast meetings of other important committees.

Other meetings tentatively scheduled for breakfast or luncheon on one of the two days, include a conference on soy beans, a meeting of feed trade members, an "old timers' luncheon," meeting of the national arbitration committees, a conference of exchange officials interested in the work of the Grain Committee on National Affairs, and a meeting of country shippers and inspection officials. Invitation is being extended to the Grain Inspectors Association, the Terminal Grain Weighmasters Ass'n, the Grain Trade "Circle" and other groups to meet at the time of the Milwaukee convention.

J. M. Mehl of the Commodity Exchange Administration will be one of the speakers during the session on "Legislation and the Grain

Trade," a talk that will be of interest to exchange members. Mr. Ben E. Clement of Leon Junction, Texas, former president of the National Ass'n, will be a speaker during the same session.

"We believe a program such as this must offer interest to all classes of our members," writes President S. W. Wilder of the Grain and Feed Dealers National Ass'n. "There are some topics which are of intense interest to groups, but perhaps not all who will attend. We are trying this year to make the general sessions shorter than ever before, only an hour and a half in length, but to concentrate our discussions at each of these sessions upon one general subject of interest to all members. The breakfast and luncheon meetings will be, we believe, attended by a surprisingly large number of members, for these meetings will hold strong group interest and are being arranged in most attractive fashion.

"Our National Association is more than gratified at the spirit being shown by our Milwaukee hosts. They are more than living up to the promises they made when the convention was set for that city. They have their convention fund in hand and, at a conference with us last week, showed an enthusiasm and interest that promises great entertainment for all who visit Milwaukee."

The convention headquarters will be at the Schroeder Hotel in Milwaukee. The breakfast and luncheon meetings will be in rooms adjacent to the main convention room.

In the words of one Milwaukee host who went over the program with national association officials, "it looks like a new and novel kind of convention; a sort of three-ring circus where the visiting members will have their only difficulty in deciding which meeting to attend each day. Certainly it is packed with action."

"People will call business men names until the public realizes, as some of us realize, that modern business, thru efficient production, is bringing closer to the average man not only the things that he needs in his daily life, but the things that make life more pleasant—may I say, more 'abundant.'" —Raymond Moley.

Coming Conventions

Trade conventions are always worth while, as they afford live, progressive grain dealers a chance to meet other merchants from the same industry. You can not afford to pass up these opportunities to cultivate friendly relations and profit by the experience and study of others.

Aug. 20, 21. New York State Hay & Grain Dealers Assn, Onondaga Hotel, Syracuse, N. Y.

Sept. 9, 10, 11. Pennsylvania Millers & Feed Dealers Ass'n, Penn Harris Hotel, Harrisburg, Pa.

Sept. 11, 12. Michigan Bean Jobbers Ass'n Hotel Fort Shelby, Detroit, Mich.

Sept. 17, 18. Mineral Feed Mfrs. Ass'n at Hotel Sherman, Chicago, Ill.

Oct. 12, 13. Grain and Feed Dealers National Ass'n at Hotel Schroeder, Milwaukee, Wis.

Feb. 2, 3, 4. Farmers Grain Dealers Ass'n of North Dakota, Grand Forks, N. D.

Crop Reports

Reports on the acreage, condition and yield of grain and field seeds are always welcome.

Media, Ill., Aug. 14.—Corn is uneven, some fair and some gone. Too much grasshoppers, drouth and heat.—H. O. White & Son.

Petersburg, Ind.—The corn crop has been seriously cut by the drouth. Indications point to a larger wheat acreage being sown this fall.—W. B. C.

Sheldon, Mo., Aug. 21.—Crop conditions are very bad. No corn at all. Oats crop light. Wheat crop just fair. Weather continues very dry.—G. B. Benny & Sons.

Washington, Ind.—Wheat acreage in Daviess County will be increased about 20% this fall, due to the failure of the clover seedlings and the demand for early feed next year.—W. B. C.

North Adams, Mich., Aug. 14.—Corn will produce something, but the crop is suffering severely from drouth. Probably will produce between 25 and 50% of a normal crop.—F. I. Williams.

Latah, Wash., Aug. 17.—Harvest has just been completed here. The spring crop was the heaviest ever harvested. Farmers also report heavy pea yield with some fields going as high as 15 sacks per acre.—F. K. H.

Bickleton, Wash., Aug. 17.—In the dry-land wheat producing district here growers are all reporting bumper yields running as high as 35 bus. an acre and a price of 85¢ a bu. for soft white and \$1.02 for hard wheat.—F. K. H.

Croton, O., Aug. 21.—Farmers here are blessed with a good wheat crop, now all harvested, also good prospects for corn crop if frost holds off a little while. Oats crop best in years. Plenty of timothy seed.—Ed E. Shafer.

Gardner, Ill., Aug. 13.—We had but half a crop of oats this year, altho they were of good quality, weighing from 30 to 36 lbs. to the bu. Our corn crop will be small with a top estimate of about 40% of a crop.—Treasure Grain Co., by K. Lutz.

Rapid City, S. D., Aug. 11.—Western South Dakota had absolutely no crop whatever of anything, except in the valleys where they had irrigation, and this represents such a small percentage that it is useless to record it. All the feed that is used this year will have to be shipped in, except in places where they have some of the 1934 crop left.—McMahon Co.

Lansing, Mich., Aug. 17.—The Michigan bean crop is suffering seriously from the dry weather. We received a few scattered rains in the state last week, but unless we get a general rain Michigan will harvest less than half of even an average crop. Prices on beans, like corn, will undoubtedly get up in the luxury class.—The Kim-Murph Co., K. P. Kimball.

Decatur, Ill., Aug. 15.—Rains have improved condition of soybeans. In the central part of the state they have made a good growth and are starting to pod. The soybean acreage in Illinois is 1,549,000 acres, compared with 1,866,000 last year. With prevailing prices for beans, producers will be inclined not to cut as many for hay as last season.—Baldwin Elevator Co.

Washington, D. C.—Inspected receipts during July at representative markets show 54% of soft red winter wheat grading No. 1, 33% No. 2, 7% No. 3, 2% No. 4, 1% No. 5 and 3% sample. Light smutty applied to 3% and smutty to 2%. Of the hard red winter receipts 39% graded No. 1, 23% No. 2, 17% No. 3, 11% No. 4, 7% No. 5 and 3% sample, as reported by the Bureau of Agricultural Economics.

Chicago, Ill., Aug. 8.—On a three day trip thru north, central and eastern Illinois and portions of western Indiana, I found conditions of corn pertaining to yield for grain ranging in promise from a quarter to three-quarters of an average yield in those sections, having such drawbacks as earless stalks, missing hills and poor pollination. Monday night rainfall was quite general over most of the territory covered, proving a help to pasture and soybeans, but was only heavy enough to help corn and fall plowing in a few localities.—H. C. Donovan, statistician, Thomson & McKinnon.

Oklahoma City, Okla., Aug. 1.—The condition of corn on Aug. 1 was 24% of normal, compared with 63% a year ago, 10% two years ago and 68% the ten-year average. The indicated yield on Aug. 1 was 6.5 bus., compared with 14 bus. a year ago, 5.8 bus. two years ago and 16.7 bus. the ten-year average. Production is estimated at 12,252,000 bus., compared with 25,872,000 bus. in 1935 and 51,842,000 bus. the 1928-32 average.—U. S. Dept. of Ag.

Minneapolis, Minn., Aug. 22.—The reasons generally given for the change in our domestic flax picture are labor difficulties in the Minneapolis grain elevators and rains in the Northwest. These rains probably come too late to do any good to the present flaxseed crop, except for some very late planted flax. Precipitation has been greater in Montana and Minnesota than in North Dakota. In the latter state, at a guess, the week's rain has not amounted to much more than $\frac{1}{2}$ in. on an average.—Archer-Daniels-Midland Co.

Crawfordsville, Ind., Aug. 18.—Corn prospects over Indiana, Illinois and Ohio where we have properties are quite spotted. We have had a great many local showers but not of sufficient quantity to do a great deal of good. The corn crop looks like about one-half. Soybeans are being benefited by these rains and where they had sufficient moisture to sprout this spring, they show a good prospect for a seed crop. Oats, wheat and rye were of exceptional quality but as a rule, low in yield. Spring seeded clover is mostly gone.—Farm Loan Branch, James M. Kirkpatrick, ass't mgr.

Antwerp, O., Aug. 12.—Highest yields on small grain reported were oats 70 bus. per acre and wheat 37 bus. per acre. The lowest estimated yield on wheat is 5 bus. per acre, due to hail, and the lowest on oats is 12 bus. per acre, also due to hail. Most of our oats are grading No. 1 white, testing 32 to 35 lbs. per bu. Practically all our wheat is an excellent grade and quality, except that there is too much dockage because of chess, weed seed and sweet clover seed. The new combines are in inexperienced hands and they cracked the wheat considerably, due to excessive dryness.—Antwerp Equity Exchange Co.

Freeport, Ill., Aug. 24.—This section has had good rains and corn is making wonderful progress. Small grain crops were much better than expected, and prices are very satisfactory. We have purchased in the past two weeks quite a good deal of barley, have paid up to \$1.22 for some of it. Yields run from 20 to 50 bus., and it has proved a profitable crop. Oats are also of fine quality, but very few are sold here, practically all fed on the farms. A few days ago a farmer living in the neighborhood of Ridott called and said that he was confident that some of his corn would go 80 bus. to the acre.—H. A. Hillmer.

Assumption, Ill., Aug. 18.—The yield of wheat and oats in this community was light, about 50% of last year's yield, but the quality was good, except where damaged by chinch bugs. The prospect for new corn is very poor. The corn had a fourfold handicap, dry weather, excessive heat, chinch bugs and last, but not least, grasshoppers. It is difficult to estimate the exact damage, but I would say that the drouth, heat and chinch bugs cut the yield 50%, then the grasshoppers came along and utterly ruined hundreds of acres more. We would estimate the probable soybean yield at about 60% of last year's yield.—Assumption Co-op. Grain Co., by R. L. Wempen.

Boonville, Ind.—Robert Endicott, county agricultural agent of Warrick County, after a survey of the county, estimated crop condition as follows: Corn, 20%; soybeans for seed, 30%; alfalfa, 35%; red clover, 30%; lespedezia hay, 20%; pastures completely burned out. Prospective stock feeding in the county for the winter was placed at 25% for cattle. The feed problem during the coming fall and winter will be a serious one, in the opinion of Endicott, who looks for feed prices to soar. A hard rain at this time would do some good, of course, but many of the crops are literally burned up and will be a total loss. The drouth in Warrick County is the most serious in 50 years.—W. B. C.

Decatur, Ill., Aug. 22.—Only scattered cars of wheat moving, and mills are in the market for what wheat is offered. In localities that have had rains farmers are busy plowing, and the ground is working up nicely. Areas favored by rains scattered along since the last week in July report an improvement in the outlook for the new corn crop, and many fields are sur-

prisingly well-eared. Much of the stunted corn that is practically a failure has been or will be salvaged by feeding as green corn or cutting for fodder and silage. Very few oats moving. With corn prices and most other feeds being high compared with oats, farmers have been feeding them to their livestock on a large scale and will continue to do so as long as the present relative prices prevail. Soybeans are coming along in fine shape. Beans are podding well and present prospects are very promising for a good crop. Old beans are about all out of the territory, and producers are slow about offering new crop beans.—Baldwin Elevator Co.

Oklahoma City, Okla., Aug. 11.—The condition of Oklahoma broomcorn was 34% of normal on Aug. 1, compared with 72% a year ago and 73% the 1923-1932 average. The indicated yield, based on the Aug. 1 condition, is 150 pounds per acre, compared with 210 pounds harvested in 1935. The acreage planted during 1936 is approximately 65% of that planted a year ago. The acreage was drastically reduced in all sections of the state. The acreage was also reduced in other states except Kansas and New Mexico, which are approximately the same as in 1935. The production for the United States, based on an Aug. 1 condition of 45.9%, is indicated at 40,700 tons, or 64% of the production in 1935. The acreage for 1936 is estimated at 376,000 acres, a reduction of approximately 36% below that planted a year ago.—U. S. Dept. of Ag.

Toronto, Ont., Aug. 8.—Crop conditions reported at the end of July are the worst reported for Ontario since records of condition figures have been established. Intense heat from July 9 to 15 and an entire absence of rainfall over about two-thirds of the Province during the first three weeks of the month caused severe injury to all crops. In Elgin, Essex, Kent, and in counties east of Kingston, moisture supplies were generally sufficient and the best crops are situated in these counties. Fall wheat, fall rye, first cutting of alfalfa, and to a large extent the main hay crop were sufficiently advanced to be only slightly reduced in yield by the drought, which set in towards the end of June. Spring grains will be reduced in yield an estimated 20% for the province as a whole, with the loss in the counties of Brant, Welland, Wentworth and Haldimand averaging close to 50%. Fall wheat turned out a very good crop, with the estimated yield placed at 23.7 bus. per acre as compared with a final yield of 22.7 bus. in 1935 and 15.8 bus. in 1934.—S. H. H. Symons, Dominion Statistician.

Helena, Mont., Aug. 13.—The month of July was extremely damaging to grain crops in Montana, and caused a general shrinkage in prospects on Aug. 1 compared with a month ago. Drouth during the month became more pronounced in north-central, central, and most of eastern and southeastern Montana, where July rainfall averaged less than 50% of normal. Abnormally high temperatures prevailed throughout the month, setting a state-wide heat record for the month. Irrigated crops declined as a result of the extreme heat and a marked deterioration in dry land crops, including hay and pasture range feed, occurred throughout the eastern two-thirds of the state. Grasshopper damage continued, and invaded new crop areas as dry weather forced the insects into crop lands from the outlying range and pasture country. Winter wheat yields shrank materially from the prospect of a month ago, with the Aug. 1 estimate dropping to the lowest point since 1931. The damage to the spring wheat crop has not been fully appraised, but the Aug. 1 condition of 24% of normal was, with the exception of Aug. 1, 1931, the lowest on record for that date.—Jay G. Diamond, Agricultural Statistician.

Winchester, Ind., Aug. 13.—Here in eastern Indiana we have as good crop of wheat as we have ever seen. The oats crop was larger than we expected. Not much oats moved to market. We have shipped less than 10,000 bus. oats and we should have shipped from all our elevators and customers a fourth of a million bus. Some of the houses are full, but they will move out by truck, by Christmas we do not expect to have very many oats left. Will try to keep a little back for seed. Feed trade is not as good as expected in this dry weather. Corn seems to stand the gaff better than anything else. Mr. Kerns said that it curled up in the daytime and came out looking fresh the next morning, and that is true in this particular locality. We have had a few rains in the past two months. If what half the people say about corn is true,

we will probably produce not over 25% of an average crop. Hay that went begging at \$2 a load off the farm is now bringing \$10 to \$15 a ton and it is not very good hay at that. Alfalfa is coming on to a third cutting and is good. Dry weather did not seem to affect it, or sweet clover. Sweet clover pastures are still good. It is remarkable that one sees no poor cattle. It does not look as though this dry grass would do what it does, but appears to contain some nutrient. We hear of no wells going dry, as one would expect in this dry weather. There must be some subsoil moisture deep down. A little fall plowing done here where they are using tractors. It now looks as though the largest wheat crop is being sown, since the war. Farmers need grass and that is the best way they can get it. There are a great many farmers disking wheat under. Some farmers sowing alfalfa, sweet clover and timothy to get some early pasture next spring, likewise there is a sowing of rye for winter pasture.—Goodrich Bros. Co., P. E. Goodrich, Pres.

Minneapolis, Aug. 21. No important change has taken place in the Northwest crop situation during the past few weeks. Hot dry weather, ideal for harvesting and threshing operations, has caused further damage to late flax in the north and to corn and forage crops in the south, although there has been some limited benefit derived in small areas from local showers. Harvest of small grains is completed and threshing is finished in all but a few northern districts. The Northwest has harvested an extremely small crop of grain. In almost the entire state of South Dakota and in the greater portion of North Dakota and Eastern Montana, there will be no commercial crop and farmers who harvest enough for seed requirements will be fortunate. Although conditions in Southern Minnesota are spotted, much of this area has realized a good crop of small grains, and the returns are fair in portions of the Red River Valley and northeastern North Dakota. The quality of the new crop bread wheat is satisfactory: good in color, high in protein, low in moisture, but rather light in test weight, most of it running from 53 to 57 pounds. On the other hand, durum wheat has been a distinct disappointment. Not only is the total estimated yield considerably below domestic requirements but the quality is unsatisfactory. Color, which is so vitally important in the manufacture of semolina products, is inferior this season to the usual standard. A fairly good crop of barley and oats, both in size and quality, has been raised in southern Minnesota, and this is practically the only district in the entire Northwest which has a marketable surplus of these grains. Corn has been severely damaged, and at best only a meager outturn is in prospect. In some parts of southern Minnesota it has stood adverse conditions surprisingly well and half a normal crop is expected; in other sections the crop will be nearly a complete failure and much of it has already been cut for feed. Flax is a very poor crop, many fields being left uncut.—The Van Dusen Harrington Co., by Paul C. Rutherford.

Movement of Western Canada Grain

Fort William, Ont., Aug. 15.—The close of the 1935-36 crop year finds Canada in a far more favorable position, in so far as its carry-over of exportable wheat is concerned, than at any time during the past 7 years. Stocks of wheat in all positions in Canada totalled 108,747,059 bus., compared with 203,273,016 bus. a year ago.

Overseas clearances of Canadian grain from Canadian ports only were as follows during the crop year 1935-36, the amounts for the preceding crop year being given in parentheses, in bushels: Wheat, 144,999,058 (94,721,943); oats 10,326,353 (9,844,405); barley, 6,768,824 (5,482-353); rye, 1,313,337 (538,593), and buckwheat, 27,611 (396,380).

The small Scandinavian tramp steamers continue calling at Fort William-Port Arthur to load grain. To the end of July 736,251 bus. wheat and 181,051 bus. rye had been carried in these vessels, whilst two more were loaded on the 12th and 13th August with 109,106 bus. wheat.

During the crop year just ended Churchill received 2,487,430 bus. wheat and shipped 2,407,000 bus.; against 3,958,707 received and 4,049,877 shipped during the preceding crop year. Navigation was opened on the 9th August at Churchill by the arrival of the S.S. "Firby" for a load of wheat. Present indications point to exports via this port being larger this year than in any previous year.

Inspected receipts of grain in the western grain inspection division during the crop year have been as follows, in bushels, the inspection for the preceding crop year being given in parentheses: Wheat, 218,140,000 (231,525,000); oats, 24,950,000 (28,190,000); barley, 14,745,000 (14,840,000); flaxseed, 880,000 (431,000); and rye, 1,950,000 (1,021,000). Inspected receipts during the month of July were 13,010,000 (27,920,000); oats, 2,768,000 (2,389,000); barley, 1,618,000 (371,250); flaxseed, 90,300 (100,750), and rye, 309,000 (101,750).

Malting barley is much in demand and good premiums are being paid for it.—E. A. Ursell, statistician Board of Grain Commissioners for Canada.

General Mills, Inc., exclusive of processing taxes, paid \$2.75 for each share of common stock for federal, state and local taxes during the year ended May 31, compared with net earnings on common stock of \$3.40. Unless a halt is soon called the bureaucrats will soon grab all earnings.

Daily Closing Prices

The daily closing prices for wheat, corn, oats, rye and barley for December delivery at the following markets for the past two weeks have been as follows:

Wheat

	Option	Aug. High	Aug. Low	Aug. 12	Aug. 13	Aug. 14	Aug. 15	Aug. 17	Aug. 18	Aug. 19	Aug. 20	Aug. 21	Aug. 22	Aug. 24	Aug. 25
Chicago	115	85	110 ^{1/4}	111 ^{1/4}	110 ^{1/4}	110 ^{1/4}	110 ^{1/4}	112 ^{1/4}	113	113	112 ^{1/4}	112 ^{1/4}	112 ^{1/4}	110 ^{1/4}	109 ^{1/4}
Winnipeg†	108 ^{1/2}	74%	100 ^{1/2}	102	101 ^{1/4}	100 ^{1/2}	100 ^{1/2}	102 ^{1/2}	103	102 ^{1/2}	100 ^{1/2}	99 ^{1/2}	99 ^{1/2}	97 ^{1/2}	96
Liverpool*	115 ^{1/2}	108 ^{1/2}	108 ^{1/2}	110 ^{1/2}	111 ^{1/2}	109 ^{1/2}	108 ^{1/2}	108 ^{1/2}	110 ^{1/2}	111	110 ^{1/2}	109 ^{1/2}	109 ^{1/2}	107 ^{1/2}	105 ^{1/2}
Kansas City	115 ^{1/2}	79%	111 ^{1/2}	113 ^{1/2}	112	113 ^{1/2}	114 ^{1/2}	114 ^{1/2}	114 ^{1/2}	113 ^{1/2}	113	113	113	110 ^{1/2}	110 ^{1/2}
Minneapolis	129	87%	124 ^{1/2}	125 ^{1/2}	125 ^{1/2}	123 ^{1/2}	124	125 ^{1/2}	126 ^{1/2}	125 ^{1/2}	124 ^{1/2}	124 ^{1/2}	124 ^{1/2}	122 ^{1/2}	121 ^{1/2}
Duluth, durum**	41 ^{1/2}	35	133 ^{1/2}	130 ^{1/2}	132	135	134	134	133 ^{1/2}	133	133 ^{1/2}	133 ^{1/2}	132 ^{1/2}	130 ^{1/2}	130 ^{1/2}
Milwaukee	114 ^{1/2}	85 ^{1/2}	110 ^{1/2}	111 ^{1/2}	110 ^{1/2}	110 ^{1/2}	112 ^{1/2}	113 ^{1/2}	113	112 ^{1/2}	112 ^{1/2}	112 ^{1/2}	110 ^{1/2}	110 ^{1/2}	110 ^{1/2}

Corn

Chicago	102 ^{1/2}	52 ^{1/2}	94 ^{1/2}	96 ^{1/2}	94 ^{1/2}	95 ^{1/2}	98 ^{1/2}	100 ^{1/2}	100 ^{1/2}	98 ^{1/2}	97 ^{1/2}	97 ^{1/2}	96 ^{1/2}	96 ^{1/2}	96 ^{1/2}
Kansas City	104 ^{1/2}	53 ^{1/2}	96 ^{1/2}	98 ^{1/2}	96 ^{1/2}	97 ^{1/2}	100 ^{1/2}	102 ^{1/2}	102 ^{1/2}	100 ^{1/2}	99 ^{1/2}	99 ^{1/2}	98 ^{1/2}	98 ^{1/2}	98 ^{1/2}
Milwaukee	102 ^{1/2}	52 ^{1/2}	94 ^{1/2}	96 ^{1/2}	94 ^{1/2}	95 ^{1/2}	98 ^{1/2}	100 ^{1/2}	100 ^{1/2}	98 ^{1/2}	97 ^{1/2}	97 ^{1/2}	96 ^{1/2}	96 ^{1/2}	96 ^{1/2}

Oats

Chicago	46 ^{1/2}	26 ^{1/2}	43 ^{1/2}	44 ^{1/2}	43 ^{1/2}	43 ^{1/2}	44 ^{1/2}	44 ^{1/2}	45 ^{1/2}	45 ^{1/2}	44 ^{1/2}	44 ^{1/2}	44 ^{1/2}	44 ^{1/2}	43 ^{1/2}
Winnipeg†	49 ^{1/2}	29 ^{1/2}	48 ^{1/2}	49 ^{1/2}	48 ^{1/2}	48 ^{1/2}	47 ^{1/2}	48 ^{1/2}	48 ^{1/2}	48 ^{1/2}	47 ^{1/2}	48 ^{1/2}	46 ^{1/2}	46 ^{1/2}	46 ^{1/2}
Minneapolis	45 ^{1/2}	26 ^{1/2}	42 ^{1/2}	43	42	42 ^{1/2}	43 ^{1/2}	43 ^{1/2}	44 ^{1/2}	43 ^{1/2}	43 ^{1/2}	43 ^{1/2}	42 ^{1/2}	42 ^{1/2}	42
Milwaukee	46	31	43 ^{1/2}	44 ^{1/2}	43 ^{1/2}	43 ^{1/2}	43 ^{1/2}	44 ^{1/2}	45 ^{1/2}	45 ^{1/2}	45	44 ^{1/2}	44 ^{1/2}	44 ^{1/2}	44 ^{1/2}

Rye

Chicago	83 ^{1/2}	55 ^{1/2}	78 ^{1/2}	79 ^{1/2}	78 ^{1/2}	78 ^{1/2}	78 ^{1/2}	77 ^{1/2}	77 ^{1/2}						
Minneapolis	80 ^{1/2}	61 ^{1/2}	76 ^{1/2}	77 ^{1/2}	75 ^{1/2}	76 ^{1/2}	66 ^{1/2}	68	69 ^{1/2}	70 ^{1/2}	68 ^{1/2}	68	68 ^{1/2}	67 ^{1/2}	67
Winnipeg†	71 ^{1/2}	41 ^{1/2}	64 ^{1/2}	66 ^{1/2}	66 ^{1/2}	66 ^{1/2}	79	80	81	81	80	80	79 ^{1/2}	78 ^{1/2}	78 ^{1/2}
Duluth**	—	—	78	79	78	79	79	80	81	81	80	80	79 ^{1/2}	78 ^{1/2}	78 ^{1/2}
Minneapolis	74 ^{1/2}	38	73 ^{1/2}	73 ^{1/2}	71 ^{1/2}	70 ^{1/2}	73	73 ^{1/2}	73 ^{1/2}	71	70 ^{1/2}	71 ^{1/2}	69 ^{1/2}	68 ^{1/2}	68 ^{1/2}
Winnipeg†	66	34 ^{1/2}	64 ^{1/2}	65 ^{1/2}	63 ^{1/2}	60 ^{1/2}	61 ^{1/2}	61 ^{1/2}	61 ^{1/2}	59 ^{1/2}	57 ^{1/2}	57 ^{1/2}	55 ^{1/2}	54 ^{1/2}	54 ^{1/2}

*At daily current rate of exchange. †October delivery. **September delivery.



Reports on the movement of grain from farm to country elevator and movement from interior points are always welcome.

Gardner, Ill., Aug. 13.—Less than 5,000 bus. of old corn is left on the farms within a four-mile radius of this town.—Treasure Grain Co. by K. Lutz.

San Francisco, Cal.—July receipts of grain were: Wheat 3,225 tons, barley 21,051, oats 160, corn 160, compared with wheat 9,780 tons, barley 18,117, oats 265, corn 160, in July, 1935.—James J. Sullivan, chief inspector, San Francisco Chamber of Commerce.

Ft. William, Ont.—July receipts of grain were: Wheat 10,817,442 bus., oats 2,317,597, rye 283-758, barley 1,201,279, mixed grain 11,342, compared with wheat 23,142,028 bus., oats 2,349,300, rye 91,301, barley 317,053, mixed grain 15,411, in July, 1935. Shipments during the same period were: Wheat 17,787,833 bus., oats 1,697,188, rye 582,271, barley 1,360,103, mixed grain 1,381, compared with wheat 26,269,832 bus., oats 301,297, rye 110,000, barley 802,890, mixed grain 4,590, in July, 1935.—E. A. Ursell, statistician Board of Grain Commissioners for Canada.

Cincinnati, O.—July receipts of grain were: Wheat 2,200,000 bus., shelled corn 259,500, oats 122,000, rye 22,400, barley 11,200, buckwheat 1,400, compared with wheat 1,078,000 bus., shelled corn 211,500, oats 78,000, rye 2,800, barley 3,200, buckwheat 4,200 in July, 1935. Shipments during the same period were: Wheat 592,000 bus., shelled corn 129,000, oats 20,000, rye 18,200, compared with wheat 292,000 bus., shelled corn 90,000, oats 58,000, in July, 1935.—John O'Hara, in charge of inspection and weighing, Cincinnati Board of Trade.

Agricultural Imports

Wheat led imports of grains during the crop year ending June 30, 1936, with 46,497,000 bus., against 25,116,000 bus. during the preceding crop year. On 25,314,000 bus. duty was paid at the rate of 42c per bushel, on 9,205,000 duty was paid at the rate of 10% ad valorem, as feed. For milling in bond 4,123,000 bus. was imported for shipment as flour to Cuba, and 7,855,000 bus. for shipment as flour to other countries, as reported by the Bureau of Foreign and Domestic Commerce. Imports of wheat during July have been very heavy tho not yet officially reported.

Imports of other farm commodities during the crop year compared with the preceding crop year, in brackets, have been as follows: corn, 31,284,000 (20,427,000); oats, 98,000 (15,614,000); rye, 2,245,000 (10,230,000); barley, 648,000 bus. (10,978,000); barley malt, 270,000,000 lbs. (271,318,000); rice, 58,467,000 lbs. (81,413,000); flaxseed, 15,388,000 bus. (15,332,000); oil cake and meal, 181,525,000 (366,730,000); cattle, 433,000 head (246,000); hogs, 9,903,000 lbs. (50,000); butter, 5,855,000 lbs. (22,393,000); cheese, 49,380,000 lbs. (48,446,000); canned meat, 88,568,000 lbs. (69,656,000); pork, 25,381,000 lbs. (3,987,000); fresh beef, 6,388,000 lbs. (5,038,000).

During July and August contracts were closed for imports of large quantities of corn not yet officially reported.

A Vancouver exporter recently was awarded damages because a boat "expected to be ready to load about Apr. 18" did not arrive until Apr. 29. Altho the use of the word "about" in all Vancouver contracts allows some latitude the arbitration committee of the Merchants Exchange held there had been a breach of contract and the duty devolved on the injured party to minimize the loss, and awarded the exporter the allowance he had made to the London buyer.

Commodity Act Invalid

Members of the Chicago Mercantile (butter and egg) Exchange, headed by Wm. S. Moore, filed a bill of complaint Aug. 15 in the United States District Court petitioning for an injunction restraining enforcement of the Commodity Exchange Act by Henry A. Wallace, Sec'y of agriculture; Leslie A. Fitz, supervisor; Michael L. Igoe, U. S. district attorney; Ernest J. Kruetgen, postmaster; Daniel C. Roper and Homer S. Cummings, of the Commodity Exchange Commission, and Michael E. Fox and other directors of the Mercantile Exchange.

Mr. Moore first made written request of the directors of the Exchange that they institute legal action to have the Act declared unconstitutional; but the directors and the business manager of the Exchange went ahead with their steps to comply with the Act and expected regulations thereunder, and refused to protect members from the federal bureaucrats. Other members of the Exchange are contributing to the costs of Mr. Moore's suit with a view to being considered parties thereto and sharing in the relief that the court is expected to grant.

Membership in the Exchange is limited to 500. The Exchange now has 474 members, the Exchange holding the remainder, the book value of a membership being in excess of \$1,200. The Exchange trades in daily and weekly puts and calls prohibited by the new law. The contracts for future delivery made up on the Exchange do not require the property to be transported across state lines, the business being entirely local and intrastate.

Under the rules of the Exchange its clearing house itself is liable if a member defaults on contract, and the clearing house charges of \$120,000 annually have accumulated a fund of \$600,000 to insure fulfillment of contracts. Plaintiff's earnings as commission merchant and floor broker during the last four years exceeded \$10,000 annually. The business of the Exchange and the value of memberships would be destroyed by enforcement of the Act.

Plaintiff, by his attorneys, Walter Bachrach and Arthur Magid, alleges that:

HARMFUL EFFECTS OF ACT

That if the Exchange, its members (including complainant), and their customers, are compelled to conform to the restrictions upon trading, which the so-called Commission and the Secretary of Agriculture are by the Act attempted to be given the purported authority to impose, the amount and volume of transactions on the Exchange for future delivery will be materially and seriously reduced.

That if the members of the Exchange are compelled to register as futures commission merchants, and to furnish certain information, and if the members of the Exchange, who are futures commission merchants, are so compelled to comply with the provisions of the Act relating to the handling and investment of the money, securities and property of their customers, it will become necessary for the Exchange, its members, and their customers to lay out and expend considerable sums of money, which, but for the Act, it would not be necessary to lay out and expend.

The Act Violates the Constitution

The Act violates Sec. 8 of Art. I of the Constitution, in that it seeks to regulate commerce which is not interstate but purely intrastate in character, and which does not directly affect, nor is in any respect a burden upon, or obstruction to, interstate commerce.

The Act violates the Tenth Amendment of the Constitution, in that it interferes with the exclusive right of the several states to provide for, and regulate, the maintenance of commodity exchanges within their borders for the making of contracts for future delivery of commodities, which are transactions wholly of an intrastate character, and which do not directly affect, or burden, or obstruct, interstate commerce.

Section 4a of the Act, which confers the power upon the so-called Commodity Exchange Commission by order to fix trading limits in respect of commodity futures and which makes it unlawful to exceed any trading limits so fixed, violates Section 8 of Article I and the Tenth Amendment of the Constitution, in that it seeks to regulate commerce and activities which are not interstate but are intrastate, and

which do not directly affect interstate commerce, and which are therefore within the exclusive right of the several states to regulate.

Law Vague and Indefinite.—Section 4a of the Act, and especially subdivision (1) thereof, violates the due process of law clause of the Fifth Amendment of the Constitution, in that the words—"Excessive speculation," "sudden or unreasonable fluctuations," and "unwarranted changes"—employed therein are so vague, indefinite and uncertain as to afford no intelligible standard for the so-called Commodity Exchange Commission to be guided by in administering the provisions of said subdivision (1) of Section 4a.

Permits Cotton Brokers to Bucket.—Sec. 4b of the Act, especially subdivision (D) thereof, violates the due process of law clause of the Fifth Amendment of the Constitution, in that it unreasonably discriminates in favor of cotton exchanges and cotton futures and against other exchanges (including this Exchange), and other futures (including butter, eggs and Irish potatoes), and thus, by depriving this Exchange and its members (including complainant) of the equal protection of the laws, deprives this Exchange and its members (including complainant) of their property without due process of law.

Sec. 4d of the Act, especially subdivision (2) thereof, which makes it unlawful for any person to engage as futures commission merchant in the purchase or sale of commodities for future delivery unless he complies with the provisions of said section prohibiting the commingling of his own funds with the moneys, securities and property of his customers, and controlling the investment thereof, violates Sec. 8 of Art. I and the Tenth Amendment of the Constitution, in that it attempts to regulate purely intrastate matters that do not directly affect interstate commerce.

Compels One to be a Criminal Witness Against Himself.—Section 4i of the Act, which makes it unlawful for any person to make any contract for the purchase or sale of commodities for future delivery unless he reports to the Sec'y of Agriculture whenever such person makes any contracts with respect to any commodity or with respect to any commodity future in an amount equal to or "in excess of" any trading limit that shall be fixed from time to time by the Secretary of Agriculture, and which requires books and records of such transactions to be kept by the persons making such transactions and that such books and records shall show complete details concerning all such transactions, including the names and addresses of all persons having any interest therein, and also that such books and records shall be open at all times to inspection by any representative of the Departments of Agriculture and Justice of the United States, violates Sec. 8 of Art. I and the Tenth Amendment of the Constitution, in that it attempts to regulate purely intrastate matters that do not directly affect interstate commerce, and also violates the Fifth Amendment of the Constitution—which provides that no person shall be compelled in any criminal case to be a witness against himself—in that said Sec. 4i of the Act seeks to compel members of the Exchange, and their customers, to furnish evidence which may be used in a criminal case against them, and which may be used to enforce the penalties of suspension or revocation of their registration as futures commission merchants or floor brokers, and to enforce other penal and criminal provisions of the Act.

Vague and Indefinite.—Section 5a of the Act delegates legislative power to the Sec'y of Agriculture, and also violates the due process of law clause of the Fifth Amendment of the Constitution, in that the words—"squeezes," and "market congestion endangering price stability" employed therein are so vague, indefinite and uncertain as to afford no intelligible standard for the Sec'y of Agriculture to be guided by.

Sec. 6 of the Act, and Sec. 6b of the Act, violate Sec. 1 of Art. III of the Constitution, in that they confer judicial powers upon the so-called Commodity Exchange Commission and upon the Sec'y of Agriculture.

Authorizes Unreasonable Search.—Sec. 4g, 4i, 5a, 8, and Subdivision (6) of Section 8a of the Act, and each of them, violate the Fourth Amendment of the Constitution, in that they authorize unreasonable search by the Sec'y of Agriculture respecting the books and records of the Exchange, its members and their customers, which do not relate to any transaction within the regulatory power of Congress under the commerce clause or any other provision of the Constitution; and also violate the Fifth Amendment of the Constitution, in that they authorize the inspection, by the United States Departments of Agriculture and Justice, of such books and records in order to procure evidence to be thereafter used in proceedings under said Act against the owners of such books and records, for the purpose of either prohibiting them from engaging in the business of making contracts in commodity futures, or enforcing against them the criminal penalties specified by said Act; and Subdivision (6) of Section 8a further violates the Fourth and Fifth Amendments of the Constitution, in that it empowers

the Sec'y of Agriculture to publish to the world-at-large facts so unlawfully obtained.

Invalid Restriction on Communication.—Sec. 4 of the Act, so far as it seeks to restrict the use of the mails to persons engaged in the commodity futures business on boards of trade not designated as "contract markets," is not within the power conferred on Congress to establish post offices and post roads, or by any other portion of the Constitution.

Sec. 4 of the Act in so far as it seeks to prohibit persons engaged in the commodity futures business on boards of trade not designated as "contract markets," from transmitting by telegram, telephone, wireless or other means of communication from one state to another, offers, orders, confirmations, or price quotations relating to the making of contracts for the future delivery of commodities, violates Sec. 8 of Art. I and the Tenth Amendment of the Constitution, in that it is not within the commerce power, or any other power, of Congress.

Judge John P. Barnes on Aug. 25 denied the injunction, dismissed the bill and held the Act was merely an extension of the Grain Futures Act which had been held constitutional by the

An Efficient Kansas Elevator

More new elevators have been erected in the Southwest this year than for the preceding five years and an average crop next year will more than double the improvements in grain handling facilities.

The 30,000 bu. elevator illustrated herewith was recently completed at Shields, Kan., on the Mo. Pacific RR. for the Robinson Elevator Co., by Ben Munson & Sons.

The elevator is of studded construction being completely iron-clad with 28 gage galvanized iron, the elevator replaces the elevator burned in April, 1935, and is built on the old foundation. The house is 32' x 26', 40' to the main plate and surmounted by a cupola 30' high, it contains 10 bins, 3 deep storage bins on each side of the work-floor, 4 overhead bins, 1 over the work-floor and 3 over the driveway. The driveway is 12' wide and the office attached is 12' x 16 ft. Incoming grain is weighed over a 15-Ton Fairbanks Motor Truck Scale with 18' x 9' platform, grain is dumped into a steel hopper through grates 4' x 8' with a Pneumatic Dump. Air is supplied by a No. 40 Curtis Compressor.

The single stand of legs encloses a 5-ply rubber covered belt with 11 x 7" 'V' buckets which run over the steel head pulley that is 44 x 14 inches. In the pit which is 20 ft. deep is an Ehrsam boot 20 x 14 inches. An Ehrsam distributor on the bin floor diverts grain to the various bins through steel spouting 16 gage. Outgoing grain is weighed through a 10 bu. Richardson Automatic Scale and delivered to the car through an 8" well casing. An Ehrsam all-steel manlift provides ready access to the cupola floor.

Power is supplied by a 10 hp. Fairbanks-Morse Engine enclosed in a fireproof engine house, a rope drive transmits the power from line shaft to head pulley. A warehouse 40 x 16' contains space for flour and feed and space is also provided for a cream station, this warehouse is set on concrete piers to make it rat and mice proof.



30,000-bu. Elevator of Robinson Elevator Co., at Shields, Kan.

Grain Door Installation Charge Attacked

The Kansas City Board of Trade by W. R. Scott, sec'y, and the Chicago Board of Trade, by J. S. Brown, manager of the transportation department, filed briefs last week with the Interstate Commerce Commission attacking the charge of \$1 per car for installing grain doors. J. L. Bowlus, manager of the transportation department of the Milwaukee Grain & Stock Exchange, joins in Mr. Brown's brief; while the secretaries or traffic managers of 15 exchanges join in the brief of W. R. Scott, as intervenors in the complaint of the Chicago Board in I.C.C. Docket No. 27284.

The controversy arose over the following tariff made effective July 1, 1935, by the railroads at 45 specified terminal grain markets from the Chicago switching district west to Ogden, Utah, and from Duluth and Minneapolis, Minn., south to Galveston and Texas City, country points not being affected:

(1) Grain Doors or Lumber for necessary side door barricades (also for necessary end door barricades, if car is equipped with end doors requiring such protection) for carload shipments in bulk, of grain, grain products, seeds and other articles taking same rates, as specified in Lists Nos. 1, 2, 3, 4, 5, 6, Items Nos. 200 to 270, inclusive, will be furnished at loading stations without charge, by the initial road-haul carrier. The grain doors or lumber so furnished shall be installed by the shipper (or his agent) and at his expense. The railroad will act as shipper's agent and install grain doors at terminal elevator points specified below, at a charge of \$1 per car; prior arrangements for the service to be made with the carriers and to cover a specified period of time:

The grain originating roads have adopted and placed in general use sectional grain doors of uniform standard design as approved by the Ass'n of American Railroads. A grain door is 7 feet long, 20 inches wide, and 2 inches thick. The door is constructed by placing two 10-inch boards, or three narrower boards one inch thick, edge to edge, and nailing one 6-inch cleat one inch thick at each end to hold the longer boards together. The space between the cleats is filled by nailing three or more 72-inch boards one inch thick to the 84-inch boards in such manner as to break the joints of the longer boards. The dimensions of the completed doors are generally uniform, but the dimensions of the material used in the construction are not uniform. The weight of the standard grain doors is from 55 to 70 pounds and averages about 60 pounds. The door can be handled by one man from grain-door piles to cars and from cars to grain-door piles.

The rule effective July 1, 1935, contains the following:

"(2) When the consignee (or his agent), where cars are unloaded, appropriates or destroys the grain doors or lumber used for side and/or end door barricades, a charge of \$1.00 per grain door (or \$5.00 per side or end doorway of a car for lumber used in lieu of grain doors) will be made."

Grain doors average in number 9 to 11 per car, and if all were destroyed the new rule would exact \$9 to \$11 per car as compared to the charge of \$1.75 per car formerly in effect for the appropriation of doors. The cost of new doors to the A. T. & S. F. Ry. f.o.b. point of manufacture is said to be 54.9 cents each.

The principal reason for any damage of grain doors is that they are nailed to the doorpost of the cars with heavy spikes by country shippers. Sometimes large cement coated nails are used which cannot be readily withdrawn from the door post. There is no standard practice with reference to nails furnished at country stations. In some parts of western territory the carriers furnish them. Generally they do not furnish them in northwestern territory, and the local elevator operator uses what nails he has available.

For years the work of installing grain doors

on outbound shipments of grain and grain products in bulk from Chicago has been performed by the railroads without charge to the shipper.

At Minneapolis for more than 35 years the railroads have furnished grain doors and installed them in the car. In all that time prior to July 1, 1935, there has never been a time where the shipper was asked to bear any expense in connection with such work.

At St. Louis prior to July 1, 1935, shippers never within the recollection of the witness extending back to 1907, were called upon to pay for the installation of grain doors.

Mr. Brown stated that, based on his detailed observations and general experience, a fair estimate of the amount of time required to cooper cars (sweeping, lugging doors, patching, papering, and nailing up doors for both sides of the car) would be about 20 minutes per car, or at least 20 cars in a day's work of eight hours.

The estimate of time required to cooper cars testified to by Witness Brown was confirmed by witness Whiting, superintendent of the Santa Fe elevator in Chicago; Sayre, a man of unusual experience in elevator operation; Keir, superintendent of the Wabash Elevator in Chicago, and Van Cura, superintendent of the Rock Island Elevator in Chicago. Witness Van Cura has observed this work for many years and states that in the busy season coopering is done in even less time. At such times he has seen three men cooper 15 cars in 45 to 60 minutes' time.

The biggest part of the time in coopering cars is said to be lugging the grain doors from the piles to the cars.

At Kansas City the carriers after July 1 continued to cooper cars; but subsequently billed the elevator firms \$1 per car, which they refused to pay; and the Kansas City lines have brought suit against one firm, the Simonds-Shields-Lonsdale Grain Co., for payment of the bills. Following are excerpts from the briefs:

The subordinate rule governing coopering is thus stated in 10 *Corpus Juris*, 86:

"If bulkheads or grain doors are necessary to render the cars safe and suitable for the character of commodity shipped, cars thus equipped must be furnished."

In *Gibbon Farmers Elev. Co. v. M. & St. L. R. Co.*, 142 Minn. 57, the plaintiff ordered cars to ship grain intrastate and some were furnished without grain doors. No lumber was furnished by defendant with which plaintiff could cooper the cars. Plaintiff thereupon bought the necessary lumber and demanded payment therefor. Judgment for plaintiff was affirmed, citing *Loomis v. Lehigh Valley R. R. Co.*, 208 N. Y. 312.

In *Claims for Loss and Damage of Grain*, 48 I. C. C. 530; 56 I. C. C. 397, the question of coopering cars for grain loading was under consideration in connection with the general subject of claims. The carriers there sought approval of a rule to shift the coopering work to the shipper, but the rule approved by the Commission was as follows:

"Cars shall be inspected and cleaned, and grain doors and other cooperage installed either by the shipper or by the carrier, according as the duty to perform these services if fixed specifically by law, or is determined by lawful custom or agreement."

It is our contention that irrespective of how it came to pass in the first instance, the fact that the carriers for a long period of years prior to July 1, 1935, admittedly installed grain doors free of charge at terminal points, is proof of the fact that this service rendered by the carriers, even if it be termed an accessory service, was included in the rates on grain and that

the grain rates were and are maintained with respect thereto. Especially is this true, because it is admitted that there was no tariff provision covering this service, and further because in every case where the Commission has had under consideration a general investigation of the grain rates, the carriers have asserted that the installation of grain doors was one of the special services performed by them in connection with the grain traffic.

We ask the Commission to find that the defendants are required by law to furnish suitable cars for the transportation of bulk grain, that ordinary box cars are not suitable to such transportation unless fully coopered, and that in the absence of a more suitable type of car it is the duty of the defendants to furnish box cars fully coopered ready to receive the lading.

Moisture Requirements of Weevil

By D. L. LINDGREN

Both the rice and the granary weevil have certain moisture requirements, but those of the granary weevil seem to be lower than those of the rice weevil. If there is insufficient moisture present, the metabolic rate decreases, finally resulting in the death of the organism. If the moisture present is sufficient or more than sufficient (all other factors being constant), the metabolic rate remains fairly uniform.

Temperature has a decided effect on the rate of respiration of the species of weevils worked with. Of the temperatures used, the insects were the most active at 35° C. Progressing either way from this temperature the carbon dioxide production falls considerably.

If moisture conditions of the wheat are favorable, the rice weevil respires more than the granary weevil, weight for weight, but if individual weevils are compared, the granary weevil has the higher rate of respiration.

Grain infested with insects probably will tend to go out of condition much sooner than uninjected grain. The metabolic water and heat given off by the insects no doubt hasten this process and may even initiate it.

Comparative studies of the rate of respiration and the susceptibility to fumigants were made of three species of stored product insects, namely, the confused flour beetle, the rice weevil, and the granary weevil. It was found that while the confused flour beetle has the highest rate of respiration, it is the most resistant to carbon disulfide and ethylene oxide. The relationship between toxicity and rate of respiration holds fairly well for the rice weevil and the granary weevil.

Studies similar to the above were carried out on the four stages of the confused flour beetle. From the data presented it seems there is no definite relationship between the rate of respiration of the different stages of an insect and their susceptibility to fumigants.

In comparing the susceptibility of insects or their stages to fumigants, the rate of respiration is not the only factor to take into consideration. Within a given stage any extrinsic factor that may tend to increase the rate of metabolism of that stage may also tend to increase the susceptibility of it to fumigants. This is shown by the effect of temperature on both the rate of respiration and the susceptibility of adult insects to fumigants.—*Bull. 109, Minn. Station*.

A trucker who bought, hauled and then resold coal was held by the Colorado Supreme Court to be liable for the same tax as a common carrier.

On any farm where the county com'ite finds that drouth or other unfavorable weather has reduced the production of soil-depleting crops below the normal level, emergency feed and forage crops seeded after July 1 may be disregarded in classifying the land on which such crops are grown.

Tricks of Truckers

By H. J. MIGHELL, Lake City, Ia.

I have before me the records of several months' operations by a grain hauling trucker. Several times he paid more per bushel for corn than he received and still the trip showed a profit. In about twenty days this trucker bought 8,298 bus. and sold 9,475 bus., having a net gain of 1,177 bus., or nearly 13 per cent gain. His loading weights average 300 bus., so it gave him an average gain of close to 40 bus. The average selling price was 86 cents so his average on stolen property was \$33.50. Following are listed a few of the loads:

	Cost	Sell				
Bus. Price, Paid	Bus. Cents Out	Bus. Price,	Sold Cents	Rec'd	Prof.	
330 80	\$264.00	401.54	85	\$341.65	\$ 77.65	
306.04 80	244.86	375.50	85	319.50	74.64	
320 78	249.60	364.26	89	324.47	74.77	
320 85	272.00	426.14	89	379.35	107.35	
287.38 76	218.63	353.05	85	300.15	81.52	
315 85	267.75	434.40	84	368.33	100.58	

I wonder how many country elevator operators sold or bought grain from truckers and thought they were ahead of the game because in selling or buying they beat the market by a cent or two?

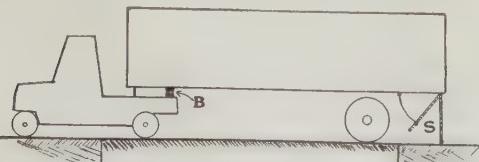
Whenever a group of trucks comes in be alert. One trucker admitted that often he or his men would go to the top of an elevator where the automatic scales were and while the grain was running would slip the pin and trip the scales by hand. While using your truck scales the truckers would sometimes open up the outside trap doors to your pit and hang weights on the scales. If there were any rods exposed a strong magnet could be put on or taken off in a hurry. Another variation of the weight could be effected by wedging in a piece of spring steel and fastening a string to it so as to jerk it away after it had served its purpose.

Some truckers are bold enough to go into your office and tamper with your scales. One method is to fasten a half pound weight to a vacuum cup and then stick this vacuum cup on the bottom of the shot cup of the scales. The cup would be fastened on the bottom of the shot cup on whichever end of the beam that gave the trucker the advantage.

I have had them come into the office while I happened to step out and have them dump the shot out of the shot cups. An improvement on this was to place a pound or half-pound weight inside the shot cups, and then, watching their chance, they would retrieve their weight.

The hardest truck to weigh is the semi-trailer which is about 30 feet long. The average country elevator scales are usually 20 feet or less in length. To weigh this truck it is necessary to make two drafts and add the weights both on the empty and the loaded weights. If the approaches are level those *should* give the correct weight. The average trucker comes on the scales with his engine running and first weighs the front wheels of the tractor and then pulls up and weighs the hind wheels of the tractor and the trailer wheels.

On scales where the approaches are level by using the air they can make the outfit weigh heavier or lighter as they please. To test this one morning I had a semi-trailer operator place his rear wheels of the tractor and the trailer wheels on the scales. The front wheels of his tractor were on a level with the scales. With the engine stopped and all brakes released he weighed 7,570 pounds. Then he started his engine, and put on the air brakes on his trailer, put



Block and Stick Under Trailer.

his gear in dual low and slipped his clutch. His weight then was 8,140 pounds. He repeated the above but put the gear in reverse and again slipping his clutch his weight was 7,010 pounds. Sounds impossible but it is true.

Another trick of the trailer operator is to put the fifth wheel connecting the tractor and trailer ahead of the axle of the tractor. Then they want to weigh only the hind wheels of the tractor and the trailer wheels. This will give an overrun and the truckers refuse to sell on these terms. The truckers would set the "fifth" wheel ahead as far as possible and after loading and getting out of sight they would jack up the trailer and slip the "fifth" wheel back to its regular place.

A third trick of truckers is to use a wooden block behind the fifth wheel and behind the rear axle of the tractor. This can best be worked where the approaches to the scales are on an incline. The block is wedged between the top of the frame of the tractor and the bottom of the frame of the trailer as shown at B in the engraving. The block, the rear axle of the tractor and the fifth wheel act as a lever throwing the weight of the front of the tractor back on the rear tractor and trailer wheels when that draft is taken. The greater the incline the heavier will be the weight of the semi. The block has no effect when weighing the front wheels of the tractor. When buying the grain they use the block on the tare weight for the semi and in selling the gross on the semi-trailer. In this way they are gaining nearly twice the weight of the front end of the tractor.

An improvement on the block idea is to have fastened to the bottom of the semi a small hydraulic jack whose plunger runs down to a plate on the frame of the tractor. This jack is controlled from the cab and is concealed.

Of course they use all the old tricks of men off and on the scales, a wheel off when it is to their advantage, using a wrecking car between the scales and frame, etc. I have even seen them when they were weighing a semi on a scale long enough to make a weight in one draft run the front wheels of another truck on the scales. This was done at a terminal and not a country elevator.

The rear stick has several variations so I will show but one. This stick is fastened to the bottom of the truck with a hinge at the rear and wire running thru pulleys to the cab, as shown at S in the engraving. As the truck comes on the scale the stick is dropped and is just long enough to scrape on the cement of the approach and as long as the stick is still on the approach it takes a lot of weight off the scales. The stick is used in weighing the gross at the buying end and the tare when the load is sold. I have never seen a stick used except on straight trucks.

Always be suspicious when you see large tool boxes and extra gas tanks, especially if there is quite a distance from the scales to the loading or unloading point for these may be "sand" boxes and "water tanks" which will be emptied or filled enroute whichever will give the trucker the advantage.

Some country elevators load semi's through automatic scales. One trucker told me he could gain 40 bushels at a certain elevator by sticking the spout in his load and backing the grain up to the scales and then the grain would run over the top hopper past the sides of the scales down to the loading spout.

In "doling down" make the tractor uncouple his air line and pull so far away that he can not get back and shove up with his fifth wheel. He can lift as much as 2,000 pounds by merely having the sections of the fifth wheel touch each other.

Wheat imports for consumption from July 1 to Aug. 15 totaled 7,000,000 bus.

A Successful Collection Method

LAPEER GRAIN CO., Inc., Lapeer, Mich., has found a new and effective method of collecting old, small accounts, thru use of a collection form copyrighted and sold by Barney Ferry, Traverse City, Mich. This form is printed on safety check paper, so that it folds once, and slips into a window envelope, giving from the outside the same appearance as a check. Naturally, anyone receiving a window envelope that looks like it might contain a check, is quick to open it. When the paper is unfolded, it reads:

DEMAND FOR PAYMENT

Creditor _____ vs. Debtor _____
TO THE ABOVE NAMED DEBTOR
Take Notice! That the above named CREDITOR hereby makes demand for the sum of \$..... with interest at the rate of per cent per annum.

NOW THEREFORE, unless said amount is paid to the creditor in the City of County of State of on or before the day of A.D. 19.... or you SHOW REASON why said claim is unpaid and make arrangements for settlement thereof, Court action will be necessary, incurring costs and disbursements in addition to amount of said claim.

Dated this day of A.D. 19....

FINAL NOTICE

Mrs. M. H. Metheney, manager of the Lapeer Grain Co., who follows suggestions and ideas for developing new business or collecting old accounts with prompt action, has been well pleased with results from her mailing. Within five days nine out of fourteen accounts had responded with payment, or had come to her office to make arrangements for payment.

Bismarck, N. D.—J. M. Shirek of the state auditing board reports that the North Dakota State Mill and Elevator sustained a loss more than a year ago of \$73,207 thru negligence in hedging. And during the period Mar. 17 to Dec. 1 there was a paper loss of \$89,901, coupled with an operating profit during the period of \$124,009. For the entire plant after including interest on indebtedness and depreciation of property there was a loss averaging \$9,252 per month.

State Weighing Stations

Half way between Yorkville and Oswego, on Route 34 in Illinois, a state weighing station is under construction as Federal Works Project No. 59C, one of seven such stations being built on main traveled truck routes.

A small office structure is being built to house records, weighing officers, and the beam of a Fairbanks pit scale with 34x9 ft. platform. Long approaches of concrete, with room for about three large trucks, connect with the pavement on either end of the scale deck.

The Division of Highways sets forth the purpose of the new stations is to weigh all trucks to see if they come within the vehicle law limits of load, and to issue routing directions to each truck, so as more reasonably to distribute truck traffic over the highways of the state, avoiding the congestion of trucks on certain highways which has been a potent cause of pleasure car accidents.

Illinois law places motor trucks under the Illinois Commerce Commission. Section 55 of the laws of 1921 refer to the carriage of passengers and/or property for hire and require for hire public utilities to obtain certificates.

Tho the actual application of the law was postponed for many years, General Order No. 133, Jan. 4, 1934, of the Illinois Commerce Commission required motor carriers to secure certificates of convenience and necessity, file tariffs, give receipts for goods, mark vehicles, cover with insurance or bond, report accidents, file operating, financial and annual reports, etc. The Commerce Commission is required to embody findings of fact in orders.

Controllable Factors of Power Costs in the Grain Industry—1

By H. H. VAN ORNUM, Minneapolis, before Society of Grain Elevator Superintendents of North America

The superintendent of a terminal grain elevator has a real job. His routine duties are many, and vary with the characteristics of the plant he operates, and with the policy of the management. However, the successful superintendent understands the handling of incoming and outgoing freight transportation by water, rail and truck, and keeps posted on the tariffs connected therewith. He has a thorough knowledge of grain grades and dockage removal. He can expertly select the storage of the many lots of grain he receives, so as to avoid mixing grades, and yet give any particular lot special treatment to improve its storagability.

From his knowledge and experience with grain cleaners and graders he is able to guide the management in improving the marketability of the grains and byproducts entrusted to his care. His shipments test at the correct grade and weight. He himself is a good carpenter, mechanic and millwright. Whether or not his plant is so equipped, he is expected to be a good steam, Diesel, and electrical engineer.

He, as superintendent, is the instructor of all his men—their leader as well as their executive. He must be a clear, quick thinker, and able to speak and write convincingly, yet diplomatically. He is expected to evaluate the factors which limit the field of operation of his plant, and to know what expenditures are justified for plant maintenance, operation or improvement.

The successful superintendent is a good housekeeper and bookkeeper. He maintains accurate, intelligent cost records of the operation of his plant. He is able quickly to advise the management the cost of handling and conditioning almost any quality and quantity of grain as to space, time, labor, and power requirements. His is a real job.

The cost of power used in operating a terminal grain elevator is an important factor. It has always been given a great deal of attention, but it seems to be difficult to analyze and evaluate for the different operations, such as

receiving, cleaning, turning, drying, mixing, and shipping.

Just what is meant by power cost? The power cost in a terminal grain elevator is the total cost of supplying the energy used at the driven shaft of the several machines installed in that terminal elevator and used in handling the grain stored or processed by that elevator.

What are the principal factors of this power cost? First, is the interest on the investment of the machinery providing the power and distributing it to the driven shafts of the several machines.

Second, the insurance, such as fire, breakdown, use and occupancy on this power producing machinery.

Third, maintenance, repairs, upkeep, and depreciation.

Fourth, fuels and other supplies converted by the power machinery into energy, or that represented, in the case of purchased power, by the power bill.

Fifth, the necessary labor to operate and maintain the power producing equipment.

Sixth, the necessary overhead in the form of management and office force to plan and serve that portion of the plant.

We realize that there are no two elevators exactly alike as to design of building or source of power and its distribution to the several machines used. The source of power may be purchased electric power, water power, steam or Diesel power with or without the use of electricity as a means of distribution.

Because many plants purchase electric power and distribute it through a wiring system to electric motors driving the individual machines, it has become possible to analyze the characteristics of the individual machines and learn more definitely their power requirements, and select the type of motor best suited to give lowest power cost.

Let us study for a few minutes the power characteristics of a number of the machines common to most elevators, with the hope that

a better understanding can be obtained, and perhaps better methods evolved, for the control of the factors of power costs.

The car puller consumes but little energy, but requires momentarily high power shocks. It is customary to use heavy trains of gears to reduce the speed of the motor to the slow line speed of the cable. Interposed in the gear train is some form of friction clutch for applying and removing the power of the motor. The motor is started under no load, and idles until the shock load is applied. Because this load is momentary, the maximum power of the motor can be used to start the cars. The standard squirrel cage motor has a pull out torque of between $2\frac{1}{2}$ and 3 times that of full load torque. In other words, a 50 H.P. motor is able to exert between 125 and 150 horsepower momentarily to start a number of cars. Unless the tracks are badly iced, only a fraction of the normal rating of the motor is necessary to keep the cars moving for the few minutes required to spot them. By selecting a type of motor which has this high momentary overload capacity, it is possible to use 40 or 50 H.P. motors where formerly 100 or 125 H.P. motors were used on car pullers—thus much reducing the investment cost, and, as we will later discover, lower materially the operating cost.

The car shovel machine is another slow speed machine. Its normal location has until recently made it inconvenient and expensive to drive with a motor of normal speed characteristics. This machine also operates under shock loads of short time duration. Two good shovels should be able to do the principal shoveling in unloading a car in about five minutes' time. There is then the period of sweeping up, removing the car from the pit, spotting the next car, and removing the grain doors before the next shoveling operation begins.

Because of the resting periods favoring the motor, it can be operated at high overloads during the period of load. A type of motor having high pull out torque permits the installation of a motor of rather low horsepower rating. By the use of reduction gears of proper design, the power equipment of a car shovel can be obtained at reasonable expense and very low operating cost.

Where these two types of machines are driven from line shafts through rope drives or belts, the design of such drives and shafts must be large enough to stand the maximum shock load imposed. The line shaft, in turn, is driven by some very much larger source of power, and therefore we are never sure of just how much power is delivered through the transmission equipment for pulling cars or shoveling grain—there being the ever present danger of breaking some of the equipment, causing shutdowns and delays. The electric motor with its maximum overload capacity represents the safety valve against breakage.

The bucket elevator is a rather simple machine. We all know that proper designs of boots and heads are important as it has been necessary to change many of them after installation to make them work properly. The design, spacing and speed of the buckets on the leg belt are also important factors of the capacity of the leg. Many and varied recommendations can be had from the many manufacturers of improved types of buckets, but there is considerable confusion in the efficiency of a bucket elevator operating at its rated capacity. In other words, the friction loss is not a known factor and has only been estimated.

Tests have been made on a number of bucket elevators driven by high grade electric motors of the proper type, to determine the friction load in the different parts of a leg, including the dragging of the buckets through the grain in the boot, and it has been found that at 75 per cent of the rated capacity, the friction is little more than 5 per cent, but increases rapidly to full load rating where it may be as much as 30 or 50 per cent of the theoretical power required to lift the grain.

[Concluded on page 165]



Illinois State Station for Weighing Trucks.
[See facing page]

Estimating Quantities of Grain for Warehouse Accounting

By Frederic C. Dobson
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CHAPTER II—REVIEW OF EXPERIMENTS

In Chapter I, which appeared in a preceding issue of the GRAIN AND FEED JOURNALS, the writer explained the importance of estimating in warehouse accounting, pointed out the weaknesses of existing methods of estimating, and indicated the need of a simple, flexible and accurate method.

The studies described in detail in this chapter were selected from the experiments conducted by the writer to determine the rates of packing effect in various grains stored in a variety of bins. As lack of space precludes the presentation of all of these experiments, these selected few are offered merely as examples to show the nature of the studies and the data obtained from them, upon analysis of which the writer has based the conclusions set forth in Chapter III, and his methods of determining rates of packing effect and estimating quantities of grain.

In all of these studies, all measurements to determine "PFCs" and "MDs" were taken directly from the bins involved. In no case was the theoretical accuracy of building contractor's blueprints depended upon. All such measurements and necessary calculations, as well as measurements to determine the depth of grain in the various bins were made by the writer with, in some instances, the invaluable collaboration of other estimators.

By weighing quantities of grain, of known test weights, into bins which had previously been measured for their PFCs and MDs, and carefully measuring the unoccupied space above the grain, it was possible to compute accurately the actual volume, the theoretical volume, the packing effect in bushels, and the rate of packing effect in each bin. In many of the bins involved in these studies, the pile of grain at the top had been leveled, but in determining the depth of grain in other bins, due allowance was made for the conical shape of the surface.

One source of possible inaccuracy in some of these studies is the fact that weight-per-bushel tests on wheat, rye and barley are made (officially) on dockage-free samples, although this dockage is contained in the grain as it stands in the bin. In this connection several tests were made to compare the test weight of dockage-included samples with test weights of the same samples after dockage had been removed. One sample of No. 2 soft red winter wheat tested 58.2 lbs. After dockage amounting to 0.52% had been removed, the weight remained 58.2 lbs. Another sample of No. 2 red wheat tested 58.8 pounds, dockage-included, and 58.85 pounds after removing 0.9% dockage. Other tests gave similar results but very little variation was shown, probably because the dockage in this wheat consisted of heavy, broken grains and seed with almost no straw or chaff. Tests on spring wheat and rye show a greater variance. Whenever possible, weight-per-bushel tests for

9. **PFC or Per Foot Capacity** is the capacity, in Winchester bushels, of each foot of depth of a bin. The **PFC** of any bin is the volume of one foot of its depth, in cubic feet, divided by 1.2445—or multiplied by 0.8035. **MD or Mean Depth** is the depth of a bin, in feet, corrected to allow for the reduction in per foot capacity of its hopped portion. The **MD** of any bin is the depth of the vertical walled portion plus the equivalent depth of its hopper.

10. **Tangent Circular Bins** are those built of concrete, tile or steel in such a way that only the thickness of one wall separates adjoining bins. Tangent bins, for example, of 20' inside diameter and 7" walls, would measure 207" from center to center.

11. An **Interstice**, sometimes called interspace bin or pocket, is a bin formed between convex surfaces of the walls of three or more adjoining circular bins. A **Regular Interstice** is formed between convex surfaces of walls of four tangent circular bins, the corners of which form the corners of a square. All other interstices are "irregular."

12. **Hydraulic Radius (HR)** of a bin is its area, in square feet, divided by its perimeter, in feet. The **HR** of circular or square bins, or bins in the shape of any regular polygon, is equal to one-fourth of their diameter or the diameter of an inscribed circle.

studies of this nature or for estimating purposes should be made on dockage-included samples.

A.—A study of the packing effect in 1,950.286 bushels of No. 1 and No. 2 rye stored in 55 "tangent",¹⁰ circular, concrete bins of 22' diameters, 107½' and 110½' deep, with PFCs of 303 and 306 and 18 "regular interstices",¹¹ 107½' deep, with PFCs of 74.

This rye was weighed into the bins on July 24, 25 and 26, and this study was begun on Aug. 2. Analysis of "running" samples of each bin furnished the following data: Test weights,

from 55.6 pounds to 58.2 pounds; except for one bin, all contained less than 1% dockage, average 0.4%; average foreign material, 0.8%; average moisture content, 13.5%; average damage, 2%; except for four bins, all graded No. 1 rye.

Tables 1 and 2 show the depth of each bin, the space above the grain, the grain depth, the actual volume (A.V.), in Winchester bushels, occupied by the grain, actual weight (A.W.) in pounds, test weight (T.W.) the theoretical volume (T.V.) computed from the actual weight and the test weight, and the packing effect (P.E.) both in bushels and in percent of the actual volume (%AV).

Analysis of the data definitely shows the relation of the test weight in rye, to the rate of packing effect, and the relation of the "hydraulic radii"¹² of bins to the rate of packing effect. Because of unavoidable errors in measuring the depth of grain it is unwise to attempt to base conclusions on the results shown for individual bins, but by grouping large numbers of bins in which the test weights of the rye averaged 58

TABLE 1.—Rye in Regular, Concrete Interstices.

Bin	Depth	Space	Grain Depth	A.V.	A.W.	T.V.	T.W.	Bus.	% A.V.
638	107½	9	98½	7,289	432,930	7,464	58.0	175	2.40
344	107½	8½	99	7,326	440,730	7,589	58.0	273	3.72
342	107½	11½	96	7,104	438,480	7,539	57.9	435	6.12
520	107½	80	27½	2,035	121,300	2,099	57.8	64	3.14
518	107½	11½	96	7,104	425,870	7,368	57.8	264	3.72
336	107½	31	76½	5,661	346,140	5,989	57.8	328	5.79
332	107½	36½	71	5,254	313,800	5,438	57.7	184	3.50
562	107½	25	82½	6,105	367,530	6,370	57.7	265	4.34
612	107½	9	98½	7,289	425,480	7,400	57.5	111	1.52
394	107½	12	95½	7,067	422,580	7,324	57.5	257	3.64
610	107½	10	97½	7,215	424,420	7,394	57.4	179	2.48
608	107½	9½	98	7,252	424,730	7,412	57.3	160	2.21
636	107½	9½	98	7,252	429,870	7,502	57.3	250	3.45
604	107½	47	60½	4,477	271,450	4,746	57.2	269	6.01
606	107½	67	40½	2,997	181,930	3,186	57.1	189	6.36
338	107½	24	83½	6,179	359,180	6,380	56.3	201	3.25
340	107½	13½	94	6,956	406,260	7,216	56.3	260	3.74
334	107½	10½	97	7,178	428,410	7,650	56.0	472	6.58
18 Interstices				111,740	6,661,090	116,076		4,336	3.88
PFGs: All 74 Bu.					or 118,948 Bu.			Weighted av.	4.00
								Mean of weighted and general averages	3.94

TABLE 2.—Rye in Circular Concrete Bins.

Bin	Depth	Space	Grain Depth	A.V.	A.W.	T.V.	T.W.	Bus.	% A.V.
547*	110½	10½	100	30,300	1,894,330	32,549	58.2	2,249	7.42
529	107½	4½	103	31,518	1,997,420	34,320	58.2	2,802	8.89
635	110½	6	104½	31,977	1,992,330	34,291	58.1	2,314	7.24
307	107½	24	83½	25,551	1,631,830	28,087	58.1	2,536	9.92
667	110½	12	98½	30,141	1,893,120	32,640	58.0	2,499	8.26
543*	110½	8	102½	31,057	1,927,220	33,228	58.0	2,171	6.99
527	107½	5	102½	31,365	1,978,920	34,119	58.0	2,754	8.78
399	107½	7½	100	30,600	1,929,520	33,325	57.9	2,725	8.91
611	110½	12	98½	30,141	1,870,550	32,362	57.8	2,221	7.37
573	110½	6½	104	31,824	1,988,060	34,396	57.8	2,572	8.08
585	110½	7	103½	31,671	1,980,910	34,272	57.8	2,601	8.21
669	110½	7	103½	31,671	1,985,610	34,353	57.8	2,682	8.47
459	110½	10½	100	30,600	1,923,150	33,272	57.8	2,672	8.73
443	107½	6	101½	31,059	1,962,230	33,949	57.8	2,890	9.30
515	110½	42	68½	20,961	No. 2 1,337,140	23,134	57.8	2,173	10.37
619	110½	67	43½	13,311	849,150	14,691	57.8	1,380	10.37
577	110½	6½	104	31,824	1,973,510	34,203	57.7	2,379	7.48
491	110½	10	100½	30,753	1,922,810	33,324	57.7	2,571	8.36
437	107½	5	102½	31,365	No. 2 1,966,240	34,077	57.7	2,712	8.65
531	107½	6	101½	31,059	1,957,180	33,920	57.7	2,861	9.21
439	107½	6	101½	31,059	1,961,570	33,979	57.7	2,920	9.40
677	110½	7½	103	31,518	1,965,650	34,126	57.6	2,608	8.27
551*	110½	10½	100	30,300	1,875,620	32,888	57.6	2,588	8.54
575	110½	7	103½	31,671	1,987,280	34,501	57.6	2,830	8.93
441	107½	5½	102	31,212	1,909,220	33,204	57.5	1,992	6.39
665	110½	23½	87	26,622	1,646,440	28,634	57.5	2,012	7.56
613	110½	11½	99	30,294	1,882,320	32,736	57.5	2,442	8.06
555*	110½	10	100½	30,451	1,895,300	32,962	57.5	2,511	8.25
461	110½	32½	78	23,868	1,489,630	25,907	57.5	2,039	8.54
617	110½	35	75½	23,103	1,415,140	24,654	57.4	1,551	6.71
673	110½	23½	87	26,622	1,644,930	28,657	57.4	2,035	7.64
675	110½	7½	103	31,518	1,967,680	34,280	57.4	2,162	8.76
651	110½	6	104½	31,977	1,997,420	34,789	57.4	2,821	8.82
493	110½	7	103½	31,671	1,965,680	34,365	57.2	2,694	8.51
545*	110½	11	99½	30,149	1,878,600	32,843	57.2	2,694	8.92
383	107½	8	99½	30,447	1,917,440	33,522	57.2	3,075	10.10
647	110½	20	90½	27,693	1,700,470	29,731	57.1	2,088	7.54
427	110½	5¾	104¾	32,053	1,997,350	35,041	57.0	2,988	9.32
341	107½	7½	100	30,600	1,932,950	33,911	57.0	3,311	10.82
637	110½	5½	105½	32,206	1,996,070	35,080	56.9	2,874	8.92
377	107½	10¾	96¾	29,605	1,848,490	32,601	56.7	2,996	10.12
345	107½	7½	100	30,600	1,915,720	33,847	56.6	3,247	10.61
645	110½	10½	100	30,600	1,844,210	33,349	56.5	2,749	8.98
433	107½	6	101½	31,059	1,954,870	34,599	56.5	3,540	11.40
413	107½	6	101½	31,059	1,934,860	34,367	56.3	3,308	10.65
407	107½	6½	101	30,906	1,946,870	34,580	56.3	3,674	11.89
369	107½	14¾	92¾	28,381	No. 2 1,802,200	32,011	56.3	3,630	12.79
405	107½	8½	99	30,294	1,920,980	30,294	56.2	3,887	12.17
347	107½	8¾	98¾	30,216	1,906,450	33,923	56.2	3,707	12.27
365	107½	7	100½	30,753	1,935,430	34,500	56.1	3,747	12.18
381	107½	7	100½	30,753	1,922,560	34,331	56.0	3,578	11.63
335	107½	12	95½	29,223	1,829,120	32,663	56.0	3,440	11.77
343	107½	8	99½	30,447	1,915,000	34,196	56.0	3,749	12.31
391	110½	9½	101	30,906	No. 2 1,911,610	34,320	55.7	3,414	11.05
435	107½	6½	101	30,906	1,938,570	34,866	55.6	3,960	12.81
55 Bins				1,639,490	102,554,930	1,792,715		153,225	9.35
PFGs: 306, except (*) 303. 1d = one per cent dockage.					or 1,831,338 Bu.			Weighted av.	9.34

pounds, 57.5 pounds, 57 pounds, 56.5 pounds and 56 pounds, the average rates of packing effect were shown to be 8.19%, 8.64%, 9.43%, 10.67%, and 12.11% respectively. Similar grouping of interstices in which the test weights averaged 58 pounds, 57.5 pounds, 57 pounds and 56.5 pounds, showed average rates of packing effect of 3.06%, 3.702%, 3.93% and 5.085%, respectively, showing both in the bins and in the interstices that the rates of P. E. vary inversely with variations in the test weights.

Comparison of the rates of P. E. in rye in bins to those in rye of the same test weight in interstices of the same depth, showed an average ratio of 2.34 to 1.0. The area of a cross-section of one of these bins is 380.1336 square feet, the "cross-sectional area" of the interstice is 92 square feet, showing a ratio of 4.135 to 1.0, almost twice the ratio of the rates of P. E. It is known, however, that the vertical and lateral pressures in grain in bins are affected not only by the size of the bins, but by the size in relation to the wall surface. This relationship is expressed as the hydraulic radius of the bin, and its consideration provides a clearer conception of the effect on rates of P. E. The hydraulic radii of these bins and interstices are 5.5' and 2.19', showing a ratio of 2.5 to 1.0, which closely approaches the average ratio of the rates of P. E.

B.—A study of the packing effect in 500,875 bushels of hard red spring wheat stored in 15 tangent, circular, concrete bins of 23'6" diameters, with PFCs of 347 and MDs of 92'6", and one regular interstice with a PFC of 119 and a MD of 85'6". The average test weight of this wheat was 58.7 pounds and it was weighed into the bins between February 24 and March 6. This study was made the following week. As this lot of wheat was delivered direct to the bins from a boat, test weights on the individual bins were not available. Had they been, their several rates of packing effect could have been computed with even greater accuracy and in all probability would have accounted for some of the variations shown. However, with only two exceptions, (which are to be expected in any studies of this nature) the rates indicated for each of the bins were within one percent of the weighted average, 8.09%. This indicates that the rate of packing effect in 58.7 pound spring wheat when stored in 92 foot concrete bins with a hydraulic radius of 5.875', is slightly over 8 percent. Comparison of this rate with that indicated for 58 pound rye, in the preceding study, demonstrates another relationship: That the rates of packing effect in wheat are equal to the rates in rye of the same test weight, when stored in the same bins, and that therefore, in determining packing effect, rye and wheat can be considered as one grain.

Washington, D. C.—Mills reporting to the Bureau of the Census, 865 in number, held 62,641,636 bus. of wheat June 30, against 58,700,271 on June 30, 1935.

The Internal Revenue Bureau ruled July 31 that payments of government money to farmers under the soil conservation program of the A.A.A. are subject to the federal income tax—the hair-splitters!

Cotton held by the A.A.A. pool has been sold, Sec'y of Agriculture Wallace stated July 30. The government still has 3,000,000 bales in the Commodity Credit Corporation, as the result of loans at 12 cents per pound.

Mills (1094) reporting to the Bureau of the Census ground 455,511,895 bus. of wheat in the crop year ending June 30 producing 98,420,262 bbls. of flour; against 440,665,345 bus. and 96,613,151 bbls. during the preceding crop year, by 1,038 reporting mills.

Hours of trading at the expiration of daylight saving time Sept. 28 were the subject of a conference July 27 at Minneapolis, between representatives of the exchanges at Chicago, Winnipeg, Kansas City, Omaha, St. Louis and Minneapolis.

13. Cross-Sectional Area is the area, in square feet, of cross-section of a bin.

Burning of Another Fireproof Elevator

Wood will burn whether surrounded by reinforced concrete, tile or iron, and the resulting heat can generally be depended upon to wreck the walls enclosing it, the experience of many grain elevator owners has emphasized this fact repeatedly, yet grain dealers continue to use wood in the construction of bin partitions, leg casings and machine platforms.

The steel tank elevator of the Township Grain Co. at Evans Station on the Illinois Terminal line near Lincoln, Ill., lost its wood insides on the night of Aug. 7 notwithstanding it was well supported by a heavy concrete foundation rising to a height of 10 feet.

J. F. Younglove, who has been building wood grain elevators for the past century, sent us the photographs and writes, "The tank is barely able to stand, but it has been considered fire-proof by some."

The concrete office was also considered fire-proof, but look at it now, stripped of its wood trimmings. Burned, along with the other combustible material in the house, were 2400 bus. of corn, 2500 bus. of wheat and 1800 bus. of oats.

Roy Gilchrist, manager of the elevator, and his assistant had been at the elevator until early evening and inspected the plant before leaving.

Screen Out the Shriveled Barley Kernels

Shippers desiring to get a good price for barley this season are advised to screen out the dry, shriveled and undeveloped kernels.

On account of the drouth this season so much of the barley is shriveled the buyers are discriminating against it.

The rules for grading provide that barley which contains in excess of 15 per cent of small and undeveloped kernels and other material (after the removal of dockage) which pass thru a 20 gage metal sieve and slotted perforations .076 (5/64) of an inch wide and $\frac{3}{4}$ of an inch long shall not grade as malting barley.

Charges for unloading a car of poultry at New York have been reduced under the new poultry amendment to the Packers and Stockyards Act from \$52 to \$34.

Ron Kennedy, sec'y of the Pacific Northwest Grain Dealers Ass'n, thinks it is never too late to learn, and last week attended the intensive course of study offered once each year at Northwestern University, Chicago, by the National Institute for Trade Ass'n Executives.



Steel Tank of Township Grain Co., at Evans Station, Ill., After Burning of Wood Partitions.

The Kansas State Corporation Commission has permitted the C.R.I.&P. to extend to all destinations on its line, the rate of \$1 per ton on salt in carloads, for extermination of bindweed and morning glories. Docket 16717.

The World Wheat Advisory Com'ite at London voted July 23 to extend its life two years in an attempt to reach a balance between production and consumption of wheat. What a farce. Up to the present the com'ite has done nothing to justify its existence.

The Treasury Department announced Aug. 15 that extension of time for the payment of the "windfall tax" imposed as a result of the supreme court's invalidation of the A.A.A. processing taxes would be granted only upon a showing that payment would result in a "substantial financial loss."

The Supreme Court of Texas has held that merchants selling their merchandise f.o.b. warehouse and then quoting a delivered price must pay the same license fees as common carriers. This will affect many elevator operators selling side lines and making a delivery charge.



Concrete Foundation of Steel Tank at Evans Station, Ill., After the Fire.

The GRAIN DEALERS JOURNAL

Driveway Observations

BY TRAVELER

RISING GRAIN PRICES are encouraging many elevator managers to return to the hazardous practice of holding the bins full of grain, unhedged, to "get the raise."

A few successes in this respect soon leads to the practice of over bidding the market to get grain and dependence upon the "raise" for a profit. But somewhere, some place, even in an upward market trend, there are recessions. The safe way for an elevator operator to buy grain is strictly on a merchandising basis.

* * * *

MOUNTING FEED PRICES are of great concern in feeding areas. Early in August a farmer's wife approached the elevator operator at Deerfield, Mich., with an offer for sale of 160 Rhode Island Red chickens because she couldn't "afford to feed them—feed is getting so high. Can you come and get them, tonight yet, because I have no feed?"

At Chesaning, Mich., a young farmer was engaged in hesitant discussion with the elevator manager over the merits of concentrate mixes and lowest cost grains which would carry his cows "along on a producing basis, even if it isn't the best feed for them."

At Holland, Mich., a farmer's wife said to the elevator's bookkeeper: "Will you please mark on the board that we have two cows for sale. We can't afford to buy feed for them." The company maintains a blackboard on which its patrons may write the articles they have to buy, sell or exchange.

Yet, in the face of these conditions some elevators still waste perfectly good feed. The chaff, corn silks, and broken kernels that come from their corn crackers, and corn cleaners will make a good dairy feed if mixed with a few concentrates and flavored with molasses. A northern Indiana grain dealer sent a sample of the chaff from his corn cracker to Purdue University for analysis. Analysis revealed that it was 8.1% moisture, 9.4 protein, 1.4 fat, 18.8 fibre, 5.5 ash, and 56.8 nitrogen-free-extract.

"That feed makes me more money than any other feed I handle," declared the elevator operator. "I used to throw it away, but now I mix some ground corn, and soybean meal with it, run it through the molasses mixer, and it comes out as an excellent dairy feed, worth \$1.25 a hundred."

When this information was passed along to one Michigan operator who was shelling corn, and dropping the cobs, dust, silk, and bees wings in a heap against the outside wall of his driveway, where a tiny spark might put the whole place ablaze, his only reply was: "We have no bin in which to put that stuff." Somehow it didn't seem to occur to him that his wasteful practice would pay for many bins.

A sample of corn chaff and silks from the cleaner in a northern Indiana elevator was analyzed by Purdue University. The analysis showed 8.1% moisture, 9.4% protein, 1.4% fat, 18.8% fibre, 5.5% ash 56.8% nitrogen-free extract. Another sample of screenings containing bits of cob, broken kernels of corn, and shreds of husk, analyzed 9.4% protein, 2.5% fat, 8% fibre, 7.1% ash, 54.1% N.F.E. With the aid of a molasses mixer, and the addition of some protein concentrates, this elevator operator is today turning these former waste products into valuable dairy feed.

* * * *

E. R. TURNBULL, owner and operator of R. Turnbull & Son, otherwise known as Turnbull's Mill, at Lapeer, Mich., tells of a gentleman of his acquaintance who has found a way to make "molasses flow in January."

The method is the simple expedient of buying molasses in drums, or if bought in larger quantities, of placing it in drums, of a framework to hold the drum of molasses, with its spigot down, and of several electric coils placed under the drum.

About an hour before the molasses is to be run thru the molasses mixer into feeds the heat is turned on. This warms the drum, and the molasses, so thoroly that the molasses pours freely—"like water," says Mr. Turnbull.

To hold up the market price the government bought cattle Aug. 20 at Chicago and Kansas City. The government on Aug. 20 asked packers for bids on buying and processing sheep and lambs, \$3,000,000 having been set aside to support the market price of sheep.

When Wife Turns Miller

BY F. L. CLARK

The elevator at the village of Readlyn in Bremer county, Iowa, used to do a good business shipping grain. Then farmers turned to feeding grain to dairy cows, hogs and poultry, and business at the elevator slowed down to near the vanishing point. The elevator doors finally were closed. They stayed closed for several years.

Then one day three years ago young Dan Buhr said to his girl wife, "I can buy that elevator for next to nothing. I believe it would pay to take it over and turn it into a feed mill, now that the farmers around here have gone in strong for feeding. There is no feed mill near. What say you to my buying?"

Wife took to the idea. The elevator was bought, and equipped with a mill and mixer of late design.

When business got going and Dan talked of the need for a helper, wife spoke up, "Why hire anybody? Let me help and keep the wages in the family."

"You?" queried Dan, pleased and amused at once. "What do you know about milling? You can't do the heavy work."

Then saucily answered friend wife, "I can learn. As for the heavy work, you can do that. I'll do the light."

The upshot of the argument was that Mrs. Buhr a couple of years ago donned overalls, and became the mill's steady helper.

The success of the partnership is testified to by the addition the Buhrs have just built to the elevator to provide room for mill feeds which they are handling in increasing volume in addition to grinding.

"What part do you do of the millwork?" Mrs. Buhr was asked.

"Oh, I weigh, and help around with almost everything. I boss too."

"I'll say she does," said Dan, giving her hand an affectionate squeeze. "We get fun out of the business as well as work."

Devious Path of an Electrical Fire

The importance of checking up occasionally on the insulation of live wires is evident from the manner in which a fire started in the elevator of the Citizens Grain Co., at Lapeel, Ind.

Burning material dropped into the sack the house man was holding to sack feed from the hammer mill. Looking up he saw fire inside the wooden spout immediately below the dust collector which was located above the driveway roof. A few pails of water promptly extinguished the fire.

R. D. MacDaniel of the Grain Dealers Fire Ins. Co. inspected the premises after the fire and made the following interesting report:

"The fire was caused by a ground in one phase of the circuit supplying the motor operating the elevator equipment in the basement of the plant. One of these wires either was not properly taped or else the tape had become worn so that the wire made contact with the motor frame. There was no inside ground to the conduit system, so the current sought to pass back thru the ground at the service entrance. This particular ground is rather lengthy, and evidently the earth at the point where the ground is made was very dry so that the current found a better path to earth by passing thru the metal siding on the elevator to the metal roof of the driveway, then up the feed spout, which was partly metal covered, to the dust collector, back thru the pipe to the hammer mill in the basement where a fairly good ground existed in the bolts which held the mill in position on the base and extended thru the base to earth.

"Evidence of heating was found at the point where the service entrance conduit made contact with the metal siding of the elevator and where the metal siding of the elevator made contact with the metal roof of the driveway. At neither of these points, however, was there any indication of fire, due probably to fairly good electrical contact.

"At the lower or discharge end of the dust collector, however, there was a jump gap between the collector itself and the metal with which the spout had been covered. At this point a severe arc occurred, thereby igniting the wooden spout.

"The house man reported that by placing one end of a short piece of wire against the metal covering on the spout and holding the other end close to the lower end of the dust collector, he was able to obtain an arc similar in appearance to that from a welding torch.

"The connection at the motor which was the



Mr. and Mrs. Dan Buhr and Their Elevator at Readlyn, Ia.

cause of the difficulty has been retaped and will be repacked with insulating material and new grounds to a well pipe will be provided from both the service entrance and the interior equipment."

Shrinkage of Stored Wheat and Oats

C. A. Patton, of the Agronomy Department at the Ohio Experiment Station, says that, in tests extending over a period of five years, wheat and oats stored in bins in good condition and kept free from rodents showed but very little loss from the standpoint of shrinkage alone at the end of the following year.

In 1912, 40 bushels each of wheat and oats were stored in substantial bins in August. The moisture content was determined at this time and each month throughout the year by means of the Brown-Duvel moisture tester, with the result that while the moisture varied slightly from month to month depending on the condition of the weather yet at the end of the year the moisture content had changed very little. The actual loss in weight of the wheat was only 13½ pounds on the entire 40 bus. and even less for the oats.

This test was repeated each year for the following four years, with the result that the average loss from shrinkage alone was 18 pounds, or .7 of one per cent, on the entire 40 bus. of wheat; the oats averaged less than 2 pounds per year on the 40 bus., or less than .2 of one per cent. The average monthly moisture content of the wheat for the entire period was 13.6 per cent and of the oats 12.8 per cent.

Country Elevator Mixes Fertilizer

Casting about for a different kind of sideline to fill in the dull periods in its feed and supply business, Knust Milling & Elevator Co., Romeo, Mich., picked on mixing of fertilizer for local use.

"Fertilizer companies," complained Geo. W. Knust, manager of the company, "allowed us only 9% for handling their products. Out of this small commission we were expected to chase around among the farmers looking for orders. Due to the costly habits of country elevators we had to make deliveries on the orders. When the crops came in, sooner if we could, we had to chase after the accounts again and collect, for the farmers' fertilizer accounts usually had to be carried, at least for 30 days.

"This carrying of accounts became doubly difficult when the fertilizer companies turned to requiring settlement of accounts on their consigned products every Monday morning instead of twice a year, as they used to require.

"The fertilizer business is seasonal. Our mixing equipment can be run from one to two months in the spring and again in the fall, tho we hope to run for longer periods as our business grows. So far we are mixing only one brand, a 2-12-6 mixture of nitrogen, phosphoric acid and potash. Registration with the state department is \$20 for each brand. A local mixer should turn out at least 500 tons annually to earn its way.

"A local mixer must buy his ingredients in carload lots. Smaller lots would cost so much that the mixing would give no advantage over the 9% commission allowed by fertilizer companies."

Mr. Knust's fertilizer ware room and mixing plant is in a building separate from his elevator. The mixing unit is self-contained. It consists of a bucket elevator from a floor level ingredient hopper where the sacks of ingredients are emptied, to a one-ton charging hopper above the mixer. A screen across the mouth of the mixer screens out lumps, diverting them to a screw conveyor that carries them across the machine and drops them into a small Fairbanks-Morse hammer mill for crushing. The crushed lumps drop from the hammer mill into a flight con-

veyor that re-elevates into the mixer. A one-ton horizontal mixer finishes the product. This has a self-emptying device to deliver the product to sacking spouts.

The charging hopper above the unit may be filled while a batch is being drawn out of the machine. This makes the mixing process almost continuous. About 15 minutes of mixing is required by each batch.

Indiana Non-Profit Corporation Act in Court

The Indiana non-profit corporation act of 1935 was involved in a decision July 29 by Judge Herbert E. Wilson of the Marion County Superior Court sustaining the refusal of the Indiana Secretary of State to grant a charter as a non-profit corporation to the St. Joseph County Consumers Co-operative Ass'n.

Judge Wilson said: "If a concern like this is going to compete with private capital and private enterprise, it should pay the same taxes as other corporations engaged in similar lines of business. The sole purpose of this organization is to obtain goods cheaper than can be bought from private concerns. This constitutes profit."

Figuring Refund for Protein Deficiency

The New Mexico Feed and Fertilizer Control Office gives the following method of calculating the refund due from manufacturer to dealer on off quality products:

Amount due as refund may be found by dividing the cost per ton by protein guaranty (gives cost per ton of 1% protein). Multiply result found by per cent of deficiency, times total tons purchased.

Example: A shipment containing 40 tons of cottonseed cake is purchased at \$32.00 per ton and guaranteed to contain 43% protein, but analysis shows it to contain 38% protein. What is the amount of refund due?

$$\begin{array}{r} \$32.00 \\ \hline \times 5\% \times 40 \text{ tons} = \$148.83 \\ 43\% \end{array}$$

Drying Grain with Inert Silica

W. M. Hurst and W. R. Humphries of the U. S. Dept. of Agriculture describe in Agricultural Engineering the results of a series of tests on the use of an inert silica absorptive agent for drying wheat, soybeans, flaxseed, corn and rice.

The data show that the moisture content of the samples of grain, soybeans, and flaxseed was reduced from 20 to 14 per cent or lower in from 24 to 48 hr. The samples in which the grain was left in contact with the drier for more than 48 hr. showed, in most cases, a further reduction in moisture. The drier used apparently absorbed more than 25 per cent of its weight of water in reducing the moisture content of grain from 20 to 14 per cent. It is estimated that with a 33½ per cent absorption approximately 12.5 lb. of the product would be required to dry 1 bu. (60 lb.) of wheat. In few cases, however, would grain have a moisture content as high as 20 per cent when threshed. In case it had 18 per cent moisture and the drier would absorb 33½ per cent of its weight of water, approximately 7.5 lb. would be required per bushel of wheat to reduce the moisture content to 14 per cent.

Rice is seeded in California by low-flying bi-planes scattering the seed evenly in a 65-ft. strip, doing 40 acres in eight minutes, against a whole day for 30 acres by the old method.

A ton of cornstalks by fermentation for 10 days will yield 10,000 to 20,000 cubic feet of gas for domestic fuel according to tests at Ames, Ia. The equipment costs \$500 to \$700. The gas can be used for motor fuel, but not for political propaganda.

Confirmation Blanks

Simple • Complete • Safe

If you would avoid trade disputes and differences, and prevent expensive errors, use triplicating confirmation blanks. You retain tissue copy, sign and send original and duplicate to customer. He signs and returns one and retains the other.

This places the entire burden for any misunderstanding of your intentions upon the other party and protects you against the expensive misinterpretation of your trades.

The use of these confirmations makes for safer business. Spaces are provided for recording all essential conditions of each trade.

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The GRAIN DEALERS JOURNAL

Short Weighted Grain Dealer on His Own Scale

Rockwell City, Ia.—Three Missouri truckers pleaded guilty to a charge of gross cheat and fraud in justice court here recently and each paid a fine of \$25 and costs. The men also agreed to return to John Knoke, manager of the Knoke Elevator, \$330 to pay for corn they obtained at his elevator by fraud. These men were Joseph William and Grover Thompson of St. Joseph, Mo., and Joy Han nah of Burlington Junction, Mo.

Knoke discovered a shortage of corn after the truckers had made two trips to his elevator. He checked up on the weights and then decided to call the sheriff and have an officer present when the truckers called.

It was disclosed that Thompson had concealed himself in the scale pit and manipulated the beam so as to short weight each load about 60 bus.

The driver sounded the horn on his truck to notify the man below when to juggle the scale.

Exchange Can Punish for Perjury

By a special act of the Wisconsin State Legislature in 1868 a charter was granted to the Milwaukee Chamber of Commerce, now known as the Milwaukee Grain & Stock Exchange, empowering the board of directors, the board of arbitration and the board of appeals to punish any person testifying falsely.

The charter provides that "If any person shall depose, swear or affirm falsely as to any matters before said board, he shall be deemed guilty of the crime of perjury, and punishable therefor according to the laws of the state . . . and he shall be liable in damages to the party aggrieved to the same extent as if he had been guilty of like neglect to attend as a witness in a court of record."

In few of the 68 years the board of arbitration has been functioning has a ruling been appealed to a court of common law and each time the board has been sustained. Appeals brought by non-members against members for some alleged injustice have also in the majority of cases been decided in favor of the non-members, indicating the impartial attitude of the tribunal.

Power at Low Cost from Diesel Engine

Few operators of feed mills and grain elevators realize that most of the high cost of the electric power supplied by the public utility companies is chargeable to the expense of getting the power from the generating station to the consumer.

The cost of distribution varies but is said to be 40 per cent, and to this must be added direct and indirect taxation.

Within the plant a change can be made without disturbing the individual motor drives when changing from purchased current to a diesel engine. Just as the power company justifies its demand charge by the necessity of providing equipment to supply the maximum demand at any one time, so the operator can figure his investment in the engine is warranted by the maximum power he will require at any time.

Up-to-date diesel engines generate power at such low cost that in many localities the 40 per cent cost of electric current distribution puts the power company out of the running.

When H. A. Lehman rebuilt his burned feed mill at North Jackson O., he decided to discontinue the use of electric power purchased at a high price from the light and power company.

Electric power he estimated to cost \$100 per month.

The diesel engine installed in the new plant has been in use for more than a year and in 15 months effected a saving of \$1,343.

He paid 5 to 5½ cents per kilowatt-hour plus

demand charges, for electric current.

The diesel engine used 1,800 gallons of fuel oil costing \$117, and 50 gallons of lubricating oil costing \$40, from Jan. 1, 1935, to April 1, 1936. The engine is a 60-h.p. 6-cylinder Fairbanks-Morse Model 36, driving a 60-cycle, 3-phase, 240-volt alternating current Fairbanks-Morse generator.

New Winter Wheat of High Quality

Reports from offices of federal grain supervision to the general field headquarters at Chicago indicate that receipts of new winter wheat are of better than normal quality. Following are some of the reports:

Fort Worth: The wheat crop in Texas is of higher quality than was expected before the beginning of the new crop movement. Approximately fifty per cent of the receipts graded No. 1.

Receipts at Fort Worth consist of 83% hard red winter (72% D.H.W., 11% H.W.), 7% soft red winter and 10% mixed (H.R.W. and S.R.W.), with 12% smutty and 2% "tough." The protein content of the crop is considerably higher than usual, and averages approximately 15% for hard red winter.

Wichita: The 1936 crop of Kansas hard red winter wheat is one of outstanding quality with test weight the principal grading factor. The harvest was about ten days to two weeks earlier than normal and ideal weather conditions prevailed to produce a crop of high protein and of splendid storage qualities.

Based on receipts at the Wichita market for the first 13 days of July, 68.7% graded dark hard winter, compared to 15.5% last year; while at Hutchinson 92.0% graded dark hard winter compared to 59.2% last year. Eight per cent contained assessable dockage against 18.0% last year at Wichita, and at Hutchinson 15.0% compared to 16.9% last year. However, for the past four days dockage is on the increase at Hutchinson, with 35.0% of the inspections containing dockage. This year at Wichita 12.0% of the receipts were degraded on account of the presence of rye, compared to 8.0% last year, and 10.2% at Hutchinson compared to 16.0% last year.

Oklahoma City: The 1936 hard red winter wheat crop is of excellent quality, with most of the market receipts grading in the dark hard winter subclass.

Omaha: The new Nebraska hard red winter wheat crop is moving to market in heavy volume. In quality, it is doubtful whether any better wheat crop has ever been produced in this State.

Indianapolis: All winter wheat receipts at Indianapolis graded high with test weight per bushel the main grading factor. About 16% contained dockage, 3% were "tough," 3% garlicky and 4% smutty. Nearly 10% of the early soft red winter wheat receipts were degraded on foreign material, and as many on "matter except other grain," mostly cockle.

Chicago: The quality of the new wheat crop arriving at this market is the best since the crop of 1930. Moisture was a grading factor on only a few cars at the beginning of the crop movement. Rye, cockle and chess are the main factors in degrading this year's crop.

Toledo: On the basis of 750 cars of the new crop soft red winter wheat recently arriving at Toledo, it appears that the grain is mostly of high numerical grade, with low moisture content and test weights averaging above 60 pounds per bushel.

From Abroad

The Swedish Tax on imported and domestically produced linseed cake and linseed meal has been increased effective July 1, 1936, from 0.02 crown to 0.03 crown per kilo and that on other oil cake and related products has been increased from 0.04 crown to 0.05 crown per kilo.

The combined Chinese and Manchurian production of oil seeds, including soybean, sesame, peanuts, cotton, rape, hemp, perilla and linseed, is expected to be substantially larger in 1936-37 than in the 1935-36 marketing period, according to a radiogram from Agricultural Commissioner O. L. Dawson in Shanghai.

The second official estimate of the 1935-36 Argentine corn crop, harvesting of which is nearing completion, is for a harvest of 381,750,000 bus., compared with the record crop of 451,943,000 bus. produced last season, according to a cable from Agricultural Attaché P. O. Nyhus in Buenos Aires. The average crop for the five years ending with the 1933-34 season was 304,856,000 bus. annually.

Receiving Books For Grain Buyers

Wagon Loads Received. A good form used extensively in recording wagon loads of grain received from farmers. Tare weight is entered immediately under gross to facilitate subtraction. Contains 200 pages of linen ledger paper, and is ruled 20 lines to a page, thus accommodating 4,000 wagon loads. Separate pages may be devoted to each kind of grain to each farmer, or wagon loads may be entered in the order received. Well bound in cloth, with keratol back and corners. Order Form 380. Price \$2.50. Weight 2½ lbs.

Receiving and Stock Book for keeping a record of each kind of grain received in separate columns, so buyer may easily determine total amount of any kind of grain on hand. Size 9½x11½, 200 pages, with a capacity for 4000 wagon loads. Well printed on linen ledger paper, bound in strong board with leather back and corners. Order Form 321. Price \$2.50. Weight 2½ lbs.

Scale Ticket Copying Book contains 150 leaves of scale tickets, four to a leaf. Each leaf folds back upon itself, so that with the use of carbon paper, it will make a complete copy of the original on the stub, with one writing. Original tickets forming the outer half of leaf are machine perforated. Printed on bond paper, check bound, size 9½x11, supplied with four sheets of carbon. Order Form 78. Price \$1.30. Weight 2 lbs.

Grain Scale Book, a combined Journal and Receiving book with index. Each man's grain is entered on his own page, or a page may be allotted to each kind of grain received. Both debits and credits are posted to the ledger. Contains 252 numbered pages and index, size 10½x15½, and will accommodate 10,332 wagon loads. Printed on linen ledger, bound in extra heavy black cloth covers, with leather back and corners. Order Form 23. Price \$4.00. Weight 5 lbs.

Grain Receiving Register is designed for recording the receipts of wagon loads of grain. Loads may be entered in consecutive order, or different sections of the book may be devoted to different kinds of grain. Book contains 200 pages of linen ledger paper, size 8½x14 inches, each of which is ruled for 41 entries, giving a total capacity of 8200 wagon loads. Well printed and substantially bound in full canvas. Order Form 12AA. Price \$2.50. Weight 3 lbs.

Duplicating Wagon Load Receiving Book, designed to facilitate the recording of number of loads from one farmer in a short time. Book contains 225 leaves, size 12x12 inches with 28 lines each, perforated down the middle; the inside half of the leaf remains in the book, and the outer half with the same ruling printed on the reverse side, folds back over the left half with carbon between. Outer half is given to farmer. It may also be used by line agents in making daily reports to headquarters. Check bound with canvas back, nine sheets of carbon. Order Form 68. Price \$2.00. Weight 4½ lbs.

Grain Receiving Ledger, may be used first as a Stock Book by posting the receipts daily, weekly or monthly from some other portion of this book, or from any other scale book, giving a page to the commodity handled; Second, as a patrons' ledger, by giving a full or half page to each patron; Third, pages may be used to enter each load of grain received in consecutive order under their respective commodity headings. The book contains 200 numbered pages with 44 lines each, and marginal index in front, size 8½x13½, ruled with the usual column headings, including Debit and Credit columns. Printed on linen ledger paper and well bound in black cloth sides with keratol back and corners. Order Form 48. Price \$3.00. Weight 2½ lbs.

Form 43XX contains 400 pages same as above. Price \$5.00. Weight 4½ lbs.

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**Grain & Feed Journals
Consolidated**
332 South La Salle St. Chicago, Ill.

Grain and Feed Trade News

Reports of new firms, changes, deaths and failures; new elevators, feed mills, improvements, fires, casualties and accidents are solicited.

ARKANSAS

Stuttgart, Ark.—The Hartz-Thorell Supply Co. is erecting a \$25,000 elevator and seed cleaning plant between the Cotton Belt and Rock Island tracks. The company maintains a soybean experimental farm near this city.

CALIFORNIA

Castaic, Cal.—The feed mill of the Newhall Land & Farming Co. burned July 31; loss, \$20,000; insurance on building, \$5,000. The grain and hay stored in the mill were insured for about three-quarters of their value.

Willits, Cal.—Some new and up-to-date machinery, including a cleaning machine, barley roller and mixer, has been installed by the Golden Eagle Milling Co., which recently leased the feed plant of L. V. Ruelle & Son, as reported in the Journals last number. Larger storage bins are also being added.

CANADA

Walkers, Ont.—The grain elevator here which has been idle for a long time has been razed.

St. Thomas, Ont.—Installation of feed grinding and mixing machinery is being considered by Hiram Walker & Sons at the Empire Flour Mills, recently leased by the former company, as reported in the July 22 Journals.

Three Rivers, Que.—The Three Rivers Grain & Elvtr. Co.'s new 2,000,000-bu. elevator, erected on the government-owned wharf which the company leased, as reported previously in the Journals, was officially opened on Aug. 5 with the arrival from Toronto of a grain boat carrying a cargo of 83,500 bus. of wheat.

Vancouver, B. C.—At the annual meeting of Vancouver Grain Exchange, held recently, Philip Wolfe was elected president and Murray Cameron vice-president. J. H. Hamilton was re-elected sec'y-treas. Members of the new council are as follows: D. R. M. McLean, J. W. Whittle, D. W. Moss, M. A. Ryan and Robert McKee.

COLORADO

Ft. Morgan, Colo.—Bill Bodley, for several years with Purina Mills, is now associated with the Jacks Bean Co., having charge of the company's feed department.

ILLINOIS

Wapella, Ill.—The Hasenwinkle-Scholer Co. sustained windstorm damage to its elevator plant last month.

Indian Oaks, Ill.—We have installed an overhead truck lift at our elevator at Indian Oaks.—Farmers Elvtr. Co.

Manteno, Ill.—We recently installed a new 20-ton, recording beam Howe Truck Scale in our local elevator.—Farmers Elvtr. Co., H. W. Elliott, mgr.

Kappa, Ill.—J. B. Drake, 87 years of age, the oldest resident of this town, and who operated its first elevator, died Aug. 23. He had lived in this village 72 years and served as its post master from 1907 till 1915.

Crete, Ill.—The Koelling Feed Co.'s large feed storage barn burned shortly after 10 p. m., Aug. 4; loss, \$8,000, including 60 loads of oats. 60 tons of hay and an undetermined amount of corn and bran; partly insured.

Raritan, Ill.—The Farmers Grain Co., of Roseville, has completed a 40x30-foot building, of frame construction on concrete walls, and covered with galvanized metal, and has installed a hammer mill and feed mixer.

Bentley, Ill.—The Bentley Farmers Elvtr. Co. is having its oil engine reset by J. C. Kintz.

Allen Junction (Allen p. o.), Ill.—The Farmers Elvtr. Co. is having J. C. Kintz install new metal spouting at its elevator.

Warrensburg, Ill.—The Warrensburg Grain Co. has just completed a new up-to-date office building at its north elevator and has also installed a new 15-ton truck scale.—Earl B. Williams, mgr., Warrensburg Grain Co.

Bondville, Ill.—Paul Coay, who has been operating the Federal Grain Co.'s elevator here for the past year, will take charge of the elevator in Homer when threshing is completed and Herbert Barker will be placed in charge of the elevator here.

Homer, Ill.—The Federal-North Iowa Grain Co.'s elevator at this point is undergoing a number of improvements. A 40-h.p. electric motor is replacing the old steam power, and back of the power room will be erected another in which a feed grinding mill will be installed. Paul Coay is being transferred by the grain company from its elevator in Bondville, Ill., to the house here.

Watseka, Ill.—Vernon Livermore, a former Watseka resident and prominent business man, died July 31, after suffering from heart trouble since last October, at the home of his wife's parents in Martinton, Ill. He was associated with James E. Bennett & Co. at this point, later receiving a promotion to Carroll and still later to Missouri, Ill., where he lived when stricken last October.

Wenona, Ill.—There will be a meeting of grain dealers of the Streator territory at the Stanton Hotel, Wenona, Aug. 27, at 6:30 p. m., at which time dinner will be served. W. E. Culbertson, sec'y of the Illinois Grain Dealers Ass'n, has a number of important matters which he wishes to discuss with the dealers of this territory, and desires a large attendance.

Dillsburg, Ill.—Clint Crane has nearly completed his new elevator which replaces his fire loss of last May, and expects to be able to take in grain on Sept. 1. Large scales have replaced the former small ones. Both Mr. Crane and the Farmers Elvtr. Co. here have signed contracts for the use of electrical power, which will be run from the main power line. Gasoline engines have been used by both houses heretofore.

Decatur, Ill.—What is known as the "specialties" building of the Shellabarger Grain Products Co. burned at 4 p. m., Aug. 13; loss, about \$7,000. The fire was reported to have been caused by soybean oil coming in contact with the firebox of a steam boiler. The building was a one-story structure of corrugated metal and was used as an experimental plant for developing new soybean products. It was located a short distance from the main elevator, which did not burn.

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CHICAGO NOTES

H. L. Harker, of the bondholders protective com'ite, has mailed holders of the bonds a defense of the plan to turn the Chicago Elvtr. Properties, Inc., to the Norris Grain Co., giving several reasons for expecting greater protection to holders of the bonds under the Norris plan.

Board of Trade members have voted to change the hours of futures trading in commodities other than cotton, effective Sept. 28, to 10:15 a. m. to 2 p. m., eastern standard time, except on Saturdays, when the hours will be from 10:15 a. m. to 12:30 p. m. At present the trading hours are from 9:30 a. m. to 1:15 p. m., except on Saturdays, when the hours are 9:30 to 12.

George E. Saunders, connected with the grain trade for many years, has become associated with the Stratton Grain Co. as manager of its grain futures department, which the Stratton Co. plans to expand. This connection is very pleasing to Mr. Saunders, as he was formerly with the Armour Grain Co., as were also several others with whom he will now be associated in the Stratton Co.

Corn having reached a price level above \$1 per bushel the clearing house of the Board of Trade has raised its margin on that grain from 3 to 4 cents per bushel. Also on Aug. 19 the directors ordered an increase in the minimum margins required of customers from 150 to 200 per cent of the clearing house margins on the different grains, the customer requirement on wheat, rye and barley being raised from 6 to 8 cents, oats from 3 to 4 cents and corn from 4½ to 8 cents per bushel.

INDIANA

Cutler, Ind.—Orth Quinn has resigned as manager of the Cutler Co-op. Elvtr. Co.'s elevator.

Indianapolis, Ind.—The Capitol Flour & Feed Co. has installed a Prater Hammer Mill, motor-driven.

Grabill, Ind.—Ray Knisely recently purchased an elevator leg and two conveyors from the Sidney Grain Mchy. Co.

Wolcott, Ind.—The Farmers Co-op. Elvtr. Co. recently installed a new 20-ton truck scale, with registering beam.

Aurora, Ind.—Aurora Flour & Feed Co. recently purchased a corn cutter and grader from the Sidney Grain Mchy. Co.

Boonville, Ind.—W. H. Bradley, for many years manager of the Elkhorn Mills here, is now associated with Otto C. Roller, of the Boonville Milling Co.—W. B. C.

Greencastle, Ind.—The Miller Grain Co. is operating the former Campbell-Ogles elevator, which it recently purchased (as reported in the July 22 Journals), under the name of the Miller Grain Co.

Portland Mills (r. d. from Judson), Ind.—Earl Padgett has bot the 80-year-old flour mill here (which has not made flour of late years) and after necessary repairs are made will put it in operation.

Fairland, Ind.—Mel Alexander, manager of the Indiana Grain Producers elevator, recently suffered the loss of his right leg and has taken six months' leave of absence. Stanley Marshall is acting as temporary manager.

Tefft, Ind.—Kroft Elvtr. Co., incorporated; capital stock, 30 shares of \$100 par value; incorporators: Ralph J. and Dorothy L. Kroft, and Merrill D. and Lily K. Gould; to conduct general grain and elevator business.

Converse, Ind.—The local elevator of Goodrich Bros. Co., of Winchester, Ind., burned at about 4 a. m., Sunday, Aug. 9; loss, \$35,000; approximately 30,000 bus of wheat, oats and rye was destroyed also. The elevator will be rebuilt.

The GRAIN DEALERS JOURNAL

Brownsburg, Ind.—The old Lingeman-Adams elevator at this point is being dismantled and taken down.

Indianapolis, Ind.—The Arnold Sales Co. is a new feed brokerage business recently organized here by M. F. Arnold, formerly with the Quaker Oats Co. for 17 years, part of which time he was manager of the company's office in this city.

Stone Bluff, Ind.—Hiram Jones, whose elevator at West Lebanon, Ind., burned last month, has had a truck with a large body built, and will use the truck for hauling grain from West Lebanon, where he will buy it, to the Stone Bluff elevator.

Columbia, Ind.—John F. Kunberger, aged 59 years, one of this town's prominent business men and owner of a 20,000-bu. elevator and feed business, died Aug. 12, at a local hospital. Mr. Kunberger had suffered with diabetes for a number of years, but was thought to have improved recently.

West Lebanon, Ind.—It is reported that a movement is on foot to build a community grain elevator here to replace Hiram Jones' elevator that burned in July, as reported in the July 22 Journals. The farmers in this vicinity feel that West Lebanon must have a grain elevator and Mr. Jones does not intend to rebuild.

IOWA

Mount Ayr, Ia.—Charles Wilson, former grain and coal dealer here, died Aug. 12 at St. Paul, Minn., while on a vacation trip.

Gifford, Ia.—The Froning Elvtr. Co. has leased the Troy Grain Co.'s elevator here and Cecil Butter has been employed as manager.

Clinton, Ia.—The Glidden Soybean Co. has completed its new plant here. The company will extract oil from corn as well as from soybeans.

Bondurant, Ia.—Repairs are being made at the Farmers Elvtr. Co.'s elevator and the plant is being painted. The T. E. Ibberson Co. is doing the work.

Palsville, Ia.—Steve Dorenkamp, 51 years of age, manager of the Farmers Elvtr. Co.'s elevator here, died in a hospital at Hampton, Ia., Aug. 7.

Des Moines, Ia.—C. S. Haten, former salesman for the Pro-Lac Feed Co., has leased the mill and will manufacture the regular line of Pro-Lac feeds.

Pekin, Ia.—The A. D. Hayes Co.'s elevator that burned early this month, as reported in the last number of the Journals, will not be rebuilt at the present time.

Bedford, Ia.—George Irwin, pres. of the Farmers Union Elvtr. Co., has been appointed active manager of the elevator, succeeding Everett Townsend, resigned.

Swea City, Ia.—The Quaker Oats Co. is having the T. E. Ibberson Co. paint and repair its elevators at this point, at Anthon, Midland, Ware and Washta, Ia.

Olin, Ia.—Ernest Peck, of Cedar Rapids, will take over the management of the elevator here, succeeding Virgil Verhon. E. H. Huijregtse, of Monticello, owns the house.

Gilmore, Ia.—C. F. Need, who has been manager of the Gilmore Grain & Elvtr. Co.'s elevator for many years, will be succeeded on Oct. 1 by S. J. Hage, of Webster City.

Meltonville, Ia.—The Speltz Grain & Coal Co. has installed a new 24-ton scale. Re-inforced piers for foundation three feet wide and 12 feet long were required for the scale.

Essex, Ia.—New grain scales have been installed by the Johnson Bros.' mill.

Readlyn, Ia.—Dan Buhr has opened a feed mill in the elevator here which was closed three years ago.

Corning, Ia.—Cooper & Akin's elevator burned during the night of Aug. 6; loss, over \$3,000. Wheat and coal stored in the elevator were destroyed, also two stock cars of the Burlington Railroad.

Plainfield, Ia.—The Farmers Elvtr. Co. is doing some extensive remodeling to its elevator, also installing a new belt and new buckets on the leg. M. Neilsen is the manager.—Art Torkelson, with Lamson Bros. & Co.

Wellsburg, Ia.—The George Potgeter Co. has transferred Virgil A. Branstetter from its elevator at Sutherland to be manager of its elevator at this point. Bob Branstetter, also formerly of Sutherland, will assist his father.

Sanborn, Ia.—The Hunting-Randall Co. has transferred Guy Boldan, who has been managing its elevator at Canton, S. D., to this point as local manager, succeeding Robert Graen. Mr. Boldan was manager here once before.

Garner, Ia.—Fire, thought to have been caused by lightning, in the top of the Farmers Co-op. Society's elevator early in the morning of Aug. 14, damaged the building to the extent of \$200. Four bins of grain were damaged slightly by water.

Lone Tree, Ia.—The elevator office of the Farmers Union Exchange was broken into by thieves, who gained entrance by forcing open the door leading to the scale driveway, recently. They were unsuccessful in opening the safe, however.

Sioux City, Ia.—At the recent annual meeting of the Terminal Grain Corp. all officers were re-elected as follows: Pres., E. C. Palmer; vice-pres., Thomas Ashford and Eugene Kelly; treas., James F. Toy; sec'y, S. P. Mason; assistant sec'y, C. E. McDonald.

Huntington, Ia.—Extensive improvements are being made by the Hubbard & Palmer Co. in its local station. A new direct-connected geared Clow-Winter Head Drive powered with a 7½-h.p. electric motor, and a Howell Safety Man Lift are being installed.

Monticello, Ia.—Grain dealers of the eastern section of the state to the number of 60 held a meeting here at the Country Club House on the evening of Aug. 13. After a fish dinner and the business meeting were disposed of, card games were enjoyed by those present.

Sutherland, Ia.—Virgil A. Branstetter, manager of the Sutherland Grain Co.'s elevator here for the past four years, has been transferred to Wellsburg, Ia., and has been succeeded here by E. H. Hunt, of Royal, manager of the Quaker Oats Co.'s elevator there for 18 years.

Rensselaer, Ia.—The Farmers Elvtr. Co. is having installed in its new plant, that replaces its July 4 fire loss, a direct-connected geared Clow-Winter Head Drive and Winter Pneumatic Truck Lift, manufactured by R. R. Howell & Co. The T. E. Ibberson Co. has the contract.

Toronto, Ia.—The Toronto Elvtr., one of the old landmarks and business places in town and which was a very busy place some years ago, is being taken down by the owners, F. Mueller & Sons. The elevator was built by W. C. Endorf in 1900. No grain has been shipped from the elevator in two years.

Council Bluffs, Ia.—The Roy A. Scofield Co. seed and feed dealers at this point, is having a new 20-ton Howe Truck Scale installed in its driveway. The new scale will have a 9x20-foot platform and type registering beam. A new 5-bu. Richardson Automatic Scale is being installed in the cupola also. The Van Ness Const. Co. has the contract.

Spencer, Ia.—Fire, believed to have originated from a spark from a motor, caused a blaze that for a time threatened the elevator of the Wilson Coal & Grain Co. Aug. 5. The motors at the elevator are enclosed in an iron-walled room for safety, which prevented the fire from spreading. Howard Wilson, owner, and employees fought and conquered the flame with fire extinguishers. Loss, about \$75.

KANSAS

Republic, Kan.—Rickel Bros. Elvtr. Co. has installed a new feed grinder.

Sterling, Kan.—The stock of the Arnold Milling Co. was damaged by fire of undetermined origin on Aug. 10, at about 6 p. m.

Leavenworth, Kan.—It is reported that a proposal to rebuild and enlarge the Farmers National Grain Corp.'s elevator that burned recently, as reported in the Journals last number, is being given consideration.

Penokee, Kan.—The Farmers Union elevator burned at noon July 31, as the result of a hot box in the cupola; loss partly covered by insurance. More than 7,000 bus. of wheat, 1,800 bus. of oats and a large quantity of bran, shorts and flour were destroyed, together with the equipment of the elevator.

Larned, Kan.—The Stafford County Flour Mills Co., of Hudson, Kan., has bot the Keystone Milling Co.'s 600-barrel mill plant here, including a 100,000-bu. concrete elevator and a large warehouse. The property has been idle for several years, ever since a Philadelphia bank, which held a mortgage on it, foreclosed. After a thoro overhauling the mill will be put into operation again.

Sibley, Kan.—The recent razing of the elevator building here marks the end of the Douglas County Co-op. Ass'n, the largest co-operative ever organized in the county. The original company, organized in 1922, erected elevators at Baldwin, Sibley and Vinland and flourished for several years. The advent of the truck began to take business away from the elevators and their decline began. The local company ceased operations in 1933.

Kansas City, Kan.—Horner & Wyatt, engineers, announce that plans and specifications for the 3,000,000-bu. elevator to be erected on the levee at Kansas City, Kan., have been completed and approved by P.W.A. for all building construction and ready for release to contractors. Bids will be taken Sept. 15. This work includes only building construction for approximately \$800,000. A contract for machinery will be let in October.

Valley Center, Kan.—The Valley Center Farmers Co-op. Elvtr. & Merc. Co. has awarded contract to Chalmers & Borton for the construction of a 35,000-bu. elevator on the site of the house that burned last month, as reported in the July 22 Journals. The elevator will consist of four 12-foot tanks, 70 feet high, with six bins over the work room and 6 bins over the driveway. Attached to the elevator will be a grinding room 18x20 feet, one story and basement.

Dodge City, Kan.—The following new members have been received by the Kansas Grain, Feed & Seed Dealers Ass'n since June 30: Minneola Co-op. Ass'n, Minneola; Farmers Co-op. Elvtr. & Supply Co., Meade; D. K. Baty Grain Co., Plains; Ashland Co-op. Exchange, Ashland; Sitka Grain Co., Sitka; Farmers Elvtr. Co., Coldwater; Equity Exchange, Mullinville; Farmers Co-op. Grain & Supply Co., Spearville; Pratt Grain & Supply Co., Pratt; Iuka Co-op. Exchange, Iuka; Preston Grain Co., Preston; Partridge Co-op. Equity Exchange, Partridge; Farmers Co-op. Grain, Milling & Merc. Ass'n, Alden; Offerle Co-op. Grain & Supply Co., Offerle; Brenham Merc. Co., Brenham; Sawyer Equity Exchange, Sawyer; Farmers Co-op. Equity Co., Isabel; Zenda Grain & Supply Co., Zenda; Anthony Farmers Co-op. Elvtr. Co., Anthony; Medicine Lodge Milling, Whse. & Supply Co., Medicine Lodge; Hazelton Co-op. Ass'n, Hazelton; Farmers Co-op. Business Ass'n, Corwin; Farmers Grain, Fuel & Livestock Co., Pawnee Rock; Farmers Co-op. Elvtr. Co., Mount Hope; Independent Co-op. Grain & Merc. Co., Stamford; Southwestern Elvtr. & Merc. Co., Hardiner, all in Kansas, and Fulton Chesnut Grain Co., Superior, Neb. This makes a total of 58 new members received into the ass'n since June 15.

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HARRY B. OLSON
ASHLAND BLOCK **CHICAGO, ILL.**

Homer, Kan.—W. Huseman's elevator was damaged by a windstorm recently.

Wichita, Kan.—One of the founders of the Stevens-Scott Grain Co., William L. Scott, well known to the trade, died recently, after being in failing health for five months. Mr. Scott had resided in this city for 32 years, retiring from active business about 18 years ago. Mr. Scott was at one time vice-pres. of the Board of Trade.

KENTUCKY

Owensboro, Ky.—Owensboro Milling Co. sustained wind damage twice within one month recently.

Loretto, Ky.—Loretto Distillery recently purchased a grain cleaner, two grain elevator legs, one meal leg and other equipment from the Sidney Grain Mch'y. Co.

Louisville, Ky.—Kentucky Public Elvtr. Co., Inc., was authorized Aug. 17 by Joseph W. Schneider, director of the division of securities, to sell \$200,000 of 5½% first mortgage bonds.—A. W. W.

Elizabethtown, Ky.—U. L. Goodman has bot the Star Mills, located on the Nolin River 12 miles south of Elizabethtown, and formerly owned by Jesse Buckles. Mr. Goodman will operate the mill.

Louisville, Ky.—Nat C. Cureton, referee in bankruptcy and acting special master in the case of the Kentucky Feed Mills, Inc., ordered a sale of assets Sept. 19. Two sales were ordered with the first purchaser to assume two mortgages amounting to \$25,000, the balance to be paid in cash. The second will be required to pay one-half in cash and the balance in six and 12-month payments. The total appraisal is \$60,000. The petition was originally filed in December.—A. W. W.

Louisville, Ky.—Preliminary work on 40 new grain storage tanks of the Kentucky Public Elvtr. Co., 15th and Gallagher, was started Aug. 19. The work will cost approximately \$200,000, of which \$50,000 will be for electrification improvements. Steadily increasing quantities of grain pouring into Louisville for the distilling industry and for dealers taking advantage of reduced freight rates was cited by Rees H. Dickson, president of the company, as necessitating the expansion. The tanks will provide space for 844,000 bus. of grain, and will be of concrete, 21 feet 5 inches in diameter and more than 120 feet high, arranged in four rows. The tanks were designed by McKenzie-Hague Co. The James Stewart Corp. is in charge of construction.—A. W. W.

MICHIGAN

Jasper, Mich.—Jasper Grain Co. has installed a McMillin Electric Truck Lift.

Vassar, Mich.—A new grain cleaner has been installed in the Hart Bros.' elevator.

Ionia, Mich.—Jonathan Hale & Sons recently sustained wind damage to their elevator.

Howard, Mich.—The Howard City Elvtr., Earl Norris manager, will install a bean drier soon.

Romeo, Mich.—A new leg and 2-h.p. motor have been installed in the Gray Elvtr. Co.'s plant.

Grass Lake, Mich.—The Grass Lake Elvtr. Co. has installed a Kelly-Duplex Corn Cracker and Grader.

Jonesville, Mich.—C. S. Bater has installed a new 10-h.p. improved motor in his wheat receiving unit.

Haslett, Mich.—Haslett Elvtr. Co., incorporated; capital stock, \$5,000; incorporators: F. L. Moldenhauer and others.

Fostoria, Mich.—The Fostoria Grain Co., subsidiary of the Frutcheby Bean Co., locally managed by W. S. Terry, is installing a vertical feed mixer.

Tecumseh, Mich.—Wm. Hayden Milling Co. is remodeling its feed plant, installing a new hammer mill and a new 2-ton Eureka Feed Mixer.

Oxford, Mich.—A new canopy roof has been built over the loading platform of the Oxford Co-op. Elvtr. Co.'s elevator, managed by Ray E. Allen.

Clinton, Mich.—The wood dam in the Raisin River, which furnishes part of the power for the Atlas Milling Co., is being rebuilt with steel and concrete.

Romeo, Mich.—Knust Milling & Elvtr. Co. has installed a fertilizer mixer and is now mixing its own fertilizer formulas for distribution to local trade.

Onsted, Mich.—The local elevator and feed grinding and mixing plant of H. E. Branch & Sons, managed by F. L. Branch, has been repainted white.

Pittsford, Mich.—Installation of individual motors for each machine in the plant of the Pittsford Milling Co. will replace the present oil engine power by Oct. 1.

Grant, Mich.—A. E. Dodd, proprietor of the local elevator, has replaced his old grinder with a new, larger one, equipped with a 30-h.p. motor and an electro-magnetic separator.

Richville, Mich.—Richard Hoerlein is considering building an additional warehouse as part of his facilities, and plans installation of a new and larger steam engine to operate his elevator.

Columbiaville, Mich.—The Spencer elevator here has been rented to the Frutcheby Bean Co. Ray Schoett has been made manager. A one-ton vertical feed mixer is being added to the equipment.

Fenton, Mich.—L. A. Riedel, manager of the Michigan Bean Co.'s elevator, who recently was seriously injured in an automobile accident, has recovered sufficiently to be able to get about, though not yet able to put in full time at the office.

Fairgrove, Mich.—Earl Smith, former proprietor of the Earl Smith & Sons elevator here, which was sold to the Caro Farmers Co-op. Elvtr. Co. several weeks ago, is reported as being sought on a criminal warrant charging forgery.

Chesaning, Mich.—The Michigan Bean Co.'s local elevator is being improved by the installation of a traveling electric McMillin Truck Lift, a dump sink, boot, leg and distributor for distribution of bulk delivered grain or beans to bins in the grain or bean division of the elevator.

Lansing, Mich.—We have lately purchased ten stations, including the bean equipment formerly operated by Andrews Bros., Inc., of Detroit. We have added these to our Lansing plant and warehouse, so as to be able to give our trade a more certain supply and be assured of the quality.—The Kim-Murph Co., K. P. Kimball.

Chelsea, Mich.—The Chelsea Milling Co. is adding two stories to the 25x86-foot warehouse on the southwest corner of its plant, fitting it with a 50-h.p. motor, packers, sifters and other machinery for blending flour and for manufacturing pancake flour. In this addition will also be room for 1,100 barrels of bulk flour storage for blending purposes.

Adrian, Mich.—Recent improvements in the grain and feed plant of the Cutler-Dickerson Co., Inc., include construction of a driveway 22 feet wide and 13½ feet high, with steel I beams supporting the roof, two dump sinks, and installation of a McMillin Electric Truck Lift and an additional leg, driven by a headdrive with special gear reduction motor. In the driveway also is the outlet for a hopper-bottomed dust bin.

Petersburg, Mich.—New machinery recently installed or being installed by the Farmers Market & Supply Co. includes a McMillin Electric Truck Lift, a 20-ton Fairbanks Truck Scale with 9x20-foot deck in the driveway, and a Jacobson Magnetic Separator ahead of the attrition mill. "This fall," says Manager Carl Breitner, "we plan to enlarge the driveway, making entrance and exit larger, for greater convenience in handling big trucks."

Prattville, Mich.—The scale deck of the Prattville Co-op. Co. has been replanked.

Mt. Pleasant, Mich.—Contract for the erection of an addition to its office building has been let by the Harris Milling Co.

Jackson, Mich.—The old milling plant of the Haywood Milling Co., with its 70,000 bus. of grain storage space, bot by A. K. Zinn & Co., of Battle Creek and Detroit, as reported in the Journals last number, is being used to store wheat and as a feed outlet. Geo. Cramer is the local manager. It is planned to put the feed grinding and mixing machinery, which may be increased this fall, to work a little later.

Hillsdale, Mich.—Rapid progress is being made on construction of the 190x40-foot 5-story and basement, re-inforced concrete doughnut flour unit being built by Burrell Eng. & Const. Co. adjacent to the 2,500-barrel remodeled flour mill of F. W. Stock & Sons, as reported in the July 8 Journals. When completed this structure will house the laboratories and the machinery for manufacturing the company's Daisy Doughnut machines, as well as the doughnut flour unit. Just completed by the company is reconstruction of the flour mill, its tempering bins, and a 180,000-bu. re-inforced concrete addition of six tanks and interstices to the storage facilities, bringing the total of the storage facilities to 600,000 bus. Old machinery for transferring wheat from the storage unit to the mill has been replaced with modern belt conveyors. Legs are equipped with Calumet Buckets. A feat in construction of the new mill building was pouring of the new walls as rapidly as old walls were removed, leaving the operation of the mill practically undisturbed during this remodeling.

MINNESOTA

Blackduck, Minn.—Dale Russell, formerly of Iowa, will open a feed mill here in the near future.

Badger, Minn.—Sjoberg Bros.' mill has been rebuilt and new seed cleaning equipment installed.

Willmar, Minn.—The Farmers Elvtr. Co. is the new name of what was formerly the Farmers & Merchants Co-op. Ass'n.

Hayfield, Minn.—Farmers Wholesale Co.'s elevator was damaged by wind recently.

Winona, Minn.—A new attrition mill has been installed by the Winona Flour & Feed Co. and a sideline of farm machinery added.

Campbell, Minn.—J. J. McIntyre died suddenly at his home on Aug. 1. He was about 64 years of age and had operated an elevator here for 27 years.

Lucan, Minn.—The local elevator of the Springfield Milling Co. has been purchased by the Eagle Roller Mill Co. L. O. Timm will continue as manager.

Northfield, Minn.—The Farmers Co-op. Elvtr. Co. decided at its recent annual meeting to amend its by-laws so that it can act under the state co-operative law.

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Joplin, Mont.—Charles Freeland has been appointed manager of the International Elvtr. Co.'s elevator here.

Rudyard, Mont.—An office radio in the plant of the Farmers Union Elvtr. Co. was destroyed recently by fire apparently originating inside the machine.

Highwood, Mont.—A large truck recently drove on to the scale of the Greely Elvtr. Co. The brakes were set and the receiving scale was damaged.

Baker, Mont.—J. R. Dickey, associated with the Columbia Elvtr. Co. for 34 years and for the past 19 years superintendent of the Columbia line of elevators, has severed his connection temporarily, due to the severe drouth in the territory served by these elevators. In the spring he will resume work with the new owner of the Columbia elevators, the Osborne-McMilan Elvtr. Co.

NEBRASKA

Omaha, Neb.—The Burlington Elvtr. Co.'s elevator was damaged by wind recently.

Omaha, Neb.—L. W. Hoffman has succeeded O. T. Brewick as local manager for Bartlett Frazier Co.

Scribner, Neb.—Larry Weaver, manager of the Scribner Grain & Lbr. Co.'s elevator for several years, has resigned.

Norman, Neb.—The Farmers Union Co-op. Co. has had minor repairs made on its driveway. The work was done by Eck Olsen.

Holdrege, Neb.—A new 60-h.p. Blue Streak Hammer Mill is being installed in our plant.—Holdrege Equity Exchange, O. C. Wilson.

Murphy, Neb.—O. H. Haskins, who has managed the Aurora Elvtr. Co.'s local elevator for 20 years, has resigned and gone to Twin Falls, Idaho.

Palmyra, Neb.—Farmers Co-op. Elvtr. Co., incorporated; capital stock, \$25,000; incorporators: E. C. Rudge, James Smith, A. H. Flegg, C. J. Olson.

Stamford, Neb.—One of the elevators here was broken into over a weekend recently, but a pad of blank checks was all that was found to be missing.

Beatrice, Neb.—The Pease Grain & Feed Co. has appointed Emil Isaacson as field man. He will buy and sell for the company, which deals in grain, feed and seed.

Carleton, Neb.—The successor of Leo Hayes as manager of the Farmers Elvtr. Co.'s elevator is Ed Gerlach, former manager of the Farmers Elvtr. Co.'s elevator at Cowles.

Fairbury, Neb.—The Farmers Union elevator caught fire at 9:30 a. m., Aug. 13. Sparks from a passing freight train engine were thought to have been the cause. A part of the roof was damaged and 75 bus. of wheat were water-soaked before the fire department succeeded in extinguishing the blaze.

Bladen, Neb.—The Farmers Co-op. Grain & Supply Co. has been bot by the Omaha Bank for Co-operatives, holder of the chattel mortgage, for the sum of \$2,800. The elevator will be put into operation as soon as there is a crop raised in the vicinity. It will not be open this winter.

Alliance, Neb.—George Neuswanger is installing a new No. 6 B grain cleaner in his elevator here. The small cleaner he had would not do the work fast enough for his requirements last year, and he is preparing for even more cleaning this year. Van Ness Const. Co. sold and is installing the new cleaner.

York, Neb.—The York Mill & Elvtr. Co. has given the contract for the erection of its new 25,000-bu. elevator that will replace its recent fire loss, to E. H. Cramer. The length of elevator, feed mill and warehouse will be 76 feet, and the elevator will be 60 feet high. New machinery to be installed in the elevator will include scales, distributors and cleaners, and in the feed mill, hammer mill, corn cracker, corn grader and a one-ton feed mixer. All machinery will be driven by electricity. The old warehouse to the south of the elevator, which was only slightly damaged by the fire, will be repaired and put into use as extra storage space.

The Nebraska State Railway Commission has issued its order requiring that all truckers acting as common carriers shall procure from the commission certificates of convenience and necessity. To get these certificates the trucker must establish his responsibility and maintain headquarters. To guard against fraud, grain and feed dealers should require that truckers show this certificate of reliability before committing any business to their care. Truckers coming across state lines are subject to the rules of the I. C. C. and must issue a complete freight bill for every shipment they carry. If they fail to do this they should at once be reported to James F. Miller, Carbide & Carbon Bldg., 912 Baltimore St., Kansas City, Mo., director for District No. 11 of the Motor Carrier Act.—J. N. Campbell, Sec'y Nebraska Grain Dealers Ass'n.

NEW ENGLAND

Enosburg Falls, Vt.—The Milling plant of C. W. Bailey & Co. was badly damaged by fire starting at 11 a. m., Aug. 17. The cause so far is undetermined.

Worcester, Mass.—Andrew Brown, manager of the feed manufacturing plant of J. B. Garland & Son, is to return next week from a month's vacation in Scotland.—L. V. S.

Boston, Mass.—New members of the Boston Grain & Flour Exchange include Robert A. Law, new freight manager of the Boston office of the Cunard White Star Line.—L. V. S.

Lynn, Mass.—New England's grain trade is mourning the death of Alexander Duncan, who had been employed 37 years by the Butman Grain Co. Born in Ireland he came to Lynn 54 years ago.—L. V. S.

Boston, Mass.—Louis W. DePass, genial sec'y of the Boston Grain & Flour Exchange, is enjoying a brief vacation. He has been sec'y of the exchange since the organization in 1925, previously having been with the old Grain Board of the Boston Chamber of Commerce.—L. V. S.

NEW JERSEY

Clifton, N. J.—The New Jersey Flour Mills have under construction an 80,000-bu. concrete and steel grain storage addition, which will bring the plant total storage facilities to 265,000 bus. Completion is expected to be about the middle of October. M. A. Long Co. has the contract.

NEW YORK

Hayt Corners, N. Y.—Bean Bros.' elevator is being enlarged and a large molasses unit installed.

GROWING corn shows benefit of recent rains —also beans. Our dry spell was forecast by Dr. Maxwell ten months ago. Later he said good rains during fall months. This means forage, fall seeding and pastures. In fact nature strikes a fair average over the years. And you just can't change her notions with dreams, destruction and doles. For it's not the road to a betterment —lasting and worth-while.

LOWELL HOIT & CO.

NORTH DAKOTA

Dresden, N. D.—H. B. Hubert's elevator was wind damaged recently.

Manfred, N. D.—The Riebe Sons Grain Co.'s elevator was wind damaged last month.

Grand Forks, N. D.—The local Cargill elevator is being repaired and new scales installed.

Wahpeton, N. D.—The Matt Braun Feed Mill was badly damaged by fire early this month; loss, about \$40,000.

McVille, N. D.—N. J. Boyum, manager of M. F. Swanston's elevator, has taken a similar position at Southam.

Beach, N. D.—Roy B. Davis, local grain merchant, died recently in a Bismarck hospital, at the age of 49 years.

Southam, N. D.—The Southam Elvtr. Co. has appointed N. J. Boyum manager of its elevator. Mr. Boyum comes from McVille.

Douglas, N. D.—Glen J. Larson has been appointed manager of the Farmers Elvtr. Co.'s elevator, succeeding William Peterson.

Grandin, N. D.—The Grandin Farmers Co-op. Elvtr. Co. has appointed August Holztagel manager of its elevator, succeeding Roy Kneisel.

Bismarck, N. D.—Hank Smith, of Heaton, has been transferred to this city, to become manager of the Monarch Elvtr. Co.'s elevator here.

Cando, N. D.—H. L. Conaway, of Rock Lake, has taken over the management of the Farmers Elvtr. Co.'s elevator, succeeding L. W. Weston.

Garrison, N. D.—The Occident Elvtr. Co. has built a four-story structure in conjunction with its elevator to house the latest feed machinery.

Glenfield, N. D.—The Monarch Elvtr. Co. has bot the Sharpe elevator here and A. I. Sharpe will be grain buyer for both the Monarch Co.'s local houses.

Max, N. D.—Henning Strom, manager of the Equity Farmers Elvtr. Co.'s elevator for several years, resigned recently and has been succeeded by C. F. Freitag.

Towner, N. D.—Henry Rockvoyn, of Willow City, has succeeded M. F. Boyer as manager of the Andrews Grain Co.'s elevator, and will move his family to this point.

Ardock, N. D.—The Cargill Elvtr. Co. is having a new 10-ton Fairbanks Scale with a dump installed in its local elevator, the T. E. Ibberson Co. doing the work.

Hunter, N. D.—The International Elvtr. Co. is improving its local elevator by the installation of a direct-connected geared Clow-Winter Head Drive, the T. E. Ibberson Co. making the installation.

Nome, N. D.—The work of moving the Monarch Elvtr. Co.'s elevator and remodeling it has been completed by the J. H. Fisch Co. A new 15-ton Fairbanks Scale and new head drives were installed and new driveway and office built.

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The GRAIN DEALERS JOURNAL

OKLAHOMA

Davenport, N. D.—The Monarch Elvtr. Co. bot the Farmers Elvtr. Co.'s elevator at Leonard, N. D., and is having it moved 10 miles to Davenport. The J. H. Fisch Co. is doing the moving and this company will also remodel the plant, improvements including new head drives, boat tank and a new 18x60-foot coal shed.

A number of North Dakota elevators will benefit by the reduced minimum power rates for elevators which were filed recently by the Central Light & Power Co., of Tulsa, Okla., with the Board of Railroad Commissioners. The minimum will be \$9 annually or 75 cents per month per h.p. The following North Dakota towns will get the reduction: Underwood, Max, Martin, Mannfred, Harvey, Hamberg, Garrison, Fessenden, Drake, Coleharbor, Cathay and Anamoose.

OHIO

Vincent, O.—Fire of unknown origin destroyed the property of the Pugh Milling Co. on Aug. 10.

Marion, O.—Old Fort Mills have installed two elevator legs furnished by the Sidney Grain Mch. Co.

Massillon, O.—The Buckeye Cereal Mills has appointed Helmer W. Smith superintendent of its feed plant.

Marshallville, O.—The Marshallville Equity Co. sustained damage by wind to its elevator early in August.

LaRue, O.—Samuel F. Weist has re-opened the Jones elevator and is buying grain and selling feed and coal.

Lakewood, O.—The Delaware Farmers Exchange, of Delaware, O., bot the elevator here from Miss Sylvia West.

Carey, O.—W. H. Smith, of Findlay, has purchased the Carey Mill & Elvtr. Co.'s plant and will take possession Sept. 1.

Mt. Sterling, O.—Teegardin-Cook Grain Co. has installed a sheller and boot furnished by the Sidney Grain Mch. Co.

Circleville, Ohio.—The Ralston-Purina Co. is building a two-story warehouse 72x72 feet for soy meal storage. Jones-Hettelsater Const. Co. has the contract.

Hatton, O.—The elevator here owned by the Prairie Farmers Co-op. Co. of Wayne, O., was recently entered by night prowlers, who blew the safe but failed to get to the money box.

Croton, O.—The Croton Elvtr. Co., formerly owned and operated by J. C. Montgomery and P. M. Ashbrook, has recently been taken over by Reed James, who now owns and operates the business.—Ed E. Shafer.

Troy, O.—R. S. Altman, of Irwin, Pa., has bot the plant of Allen & Wheeler, which includes a 250,000-bu. elevator, 600-barrel flour mill and corn mill. A line of prepared feeds will be manufactured by the new owner.

Mt. Victory, O.—The elevator of Edwin G. Craun, deceased, has been sold by his widow to Peter W. Breidenbach, elevator operator of Kenton, O. The Craun elevator had been leased by the Sneath-Cunningham Corp. of Fostoria, Ohio.

Hoyleville, O.—The Eagle Grain Co.'s plant, consisting of an elevator, coal sheds and three acres of land, was sold at sheriff's sale Aug. 18 to Ray D. Avery, Bowling Green attorney. The elevator had not been in operation for eight months.

Cleveland, O.—J. Theobald, Jr., Inc., is taking over the grain and feed brokerage business which has been carried on by Shepard, Clark & Co. for over a quarter of a century, and this department will be managed by Joe A. Streicher, formerly with J. F. Zahm & Co., of Toledo.

Cleveland, O.—The Fairchild Milling Co.'s plant, which includes a grain elevator, has been purchased by the Montana Flour Mills Co., which will erect a 500,000-bu. elevator, giving the plant a total capacity of 650,000 bus. The Jones-Hettelsater Const. Co. has the contract. O. L. Spencer is manager of the plant.

Hancock (McComb p. o.), O.—A damage suit, asking \$25,000 from the city of Findlay and the Dayton Fireworks Co., for the death of Frank Harris, manager of the McComb Farmers Co-op. Co., has been filed. Mr. Harris was injured on July 4 by an aerial bomb which went wild and exploded in the crowd, which was watching the annual municipal fireworks display, and died three days later in the hospital. Mrs. Harris is the plaintiff.

OKLAHOMA

The Leger Mill Co.'s plant, El Dorado, Okla., and the Ponca City Milling Co.'s plant, Ponca City, Okla., were recently damaged by wind.

El Reno, Okla.—The Canadian Mill & Elvtr. Co. made the test run at its new plant on Aug. 3, about a year after the destruction of its former plant by fire.

El Reno, Okla.—Robert T. Howle, manager of the El Reno Mill & Elvtr. Co., has been elected a member of the city commission, replacing a member who resigned recently.

Vici, Okla.—The Vici Roller Mill was damaged by fire early in the morning of Aug. 7. While the building was only slightly damaged, the machinery was so badly damaged it was that it would have to be replaced.

Vinita, Okla.—E. B. Baxter, whose elevator and mill burned last winter, has acquired the former Stanislaus Mill & Elvtr., remodeled and repaired the plant and made a number of improvements and has re-opened his Baxter Mill & Elvtr. for business.

PACIFIC NORTHWEST

Thornton, Wash.—Motors are being installed in the Grain Growers elevator at this point.

Colton, Wash.—The Colton Grain & Warehouse Co. is having an electric overhead Howell Truck Lift installed.

Wenatchee, Wash.—The Centennial Milling Co. recently erected a 90x51-foot grain warehouse, having a solid concrete foundation.

Athena, Ore.—Pea Vine Feed Co., incorporated; capital stock, \$1,000; incorporators: Robert C. Burkhardt, G. H. Wilson and Raley Peterson.

South Bend, Wash.—W. J. Lake & Co. plan construction of an oyster shell crushing plant here, which will employ 25 men when in operation.

Marlin, Wash.—The new elevator under construction here for the Milwaukee Grain Co. is progressing rapidly. Olsen & Co. have the contract.

Rocklyn, Wash.—The Sperry Flour Co. has leased the Rocklyn Farmers Grain Co.'s elevator and warehouse, which it will operate this season. The elevator has a bulk capacity of 20,000 bus.

Burley, Ida.—The elevator and alfalfa mill of the Burley Feed Mfg. Co. burned recently, loss, \$70,000. Outbuildings and equipment, machinery, alfalfa meal and large quantities of wheat burned also.

Benge, Wash.—The Washtucna Grain Growers, Inc., have purchased the wheat storage facilities of the Benge Elvtr. Co. here, consisting of elevator and two flat warehouses. Tom Hurst, manager, has been retained by the new owners.

Lewiston, Ida.—Walter A. Mitchell, former manager of Lewiston Grain Growers, Inc., has opened a grain brokerage office in this city, being now associated with the Continental Grain Co., having offices in San Francisco, Portland, Seattle, Spokane and Vancouver, B. C.

Eden, Ida.—The Sperry Flour Co. has reopened the elevator and warehouse here with James Henry as manager. H. J. Henry, former manager, will assist him until the opening of the bean and potato season, when he will go to Kimberly to buy for the Trinidad Bean Co.

Coulee City, Wash.—The Centennial Flour Mills Co.'s grain elevator and warehouse and several other business houses burned at 8:45 p.m., Aug. 9; total loss, estimated at \$50,000. The fire was believed to have been caused by transients cooking in an old warehouse of the Centennial Co.

Sweetwater, Ida.—Fire, reported to have started in the engine room of the elevator of the Lewiston Grain Growers, Inc., at this point, destroyed a number of elevators and warehouses and 16 freight cars, Aug. 13, during the night. Total loss, approximately \$175,000. About 100,000 bus. of grain was destroyed.

Independence, Ore.—The new grain elevator of the Monmouth Co-op. Creamery & Warehouse Ass'n (reported in the June 24 Journals as under construction) has been completed and is now receiving grain. It is of frame construction covered with sheet metal, and has a capacity of 50,000 bus. Included in the elevator equipment is a grain cleaner and a heavy duty scale for weighing trucks.

Wilbur, Wash.—The Grain Growers Warehouse Co.'s new 165,000-bu. re-inforced concrete elevator, construction of which was started this spring, as reported in the May 13 Journals, has been completed by Alloway & Georg, and the owners held open house on July 31 and Aug. 1, celebrating the completion. The company also has an 80,000-bu. elevator, erected in 1913, which is still in use. C. W. Kunz is manager.

Spokane, Wash.—C. M. Balsley claiming to represent Grain Dealers Journal, which was absorbed by the Grain & Feed Journals Consolidated several years ago, is soliciting subscriptions to the Journal in the state of Washington and collecting money without any authority from the publishers and without notifying them of his collections. He never has had any authority to represent the Grain Dealers Journal or the Grain & Feed Journals in any capacity at any time. Grain dealers will please keep on the lookout for this swindler.—Charles S. Clark, Manager.

SOUTH DAKOTA

Grenville, S. D.—The Victoria Elvtr. Co. has opened a gasoline and oil station here.

Lane, S. D.—F. L. Wasen has been appointed manager of the Farmers Elvtr. Co.'s elevator, succeeding the late John Houlihan.

Andover, S. D.—H. C. Dobberpuhl, of Stratford, has been appointed manager of the Farmers Elvtr. Co.'s elevator at this point.

Toronto, S. D.—Orton Peterson, of Brandt, has been appointed manager of the local E. A. Brown elevator, succeeding Tom Christopherson.

South Shore, S. D.—The Monarch Elvtr. Co. has appointed William Gerberding, formerly of Goodwin, its local grain buyer, succeeding Manager Asby, resigned.

South Shore, S. D.—The Farmers Elvtr. Co. is having the T. E. Iberson Co. install a 20-ton, 26-foot Fairbanks scale in its elevator, also a Strong-Scott Air Dump.

Canton, S. D.—Guy Boldan, manager of the Hunting-Randall Co.'s elevator at this point for the past year, has been made manager of the company's elevator at Sanborn, Ia.

South Dakota elevators that recently sustained windstorm damage were: Athol Grain Co., Athol; Waubay Equity Elvtr. Co., Waubay; Wecota Farmers Elvtr. Co., Wecota.

Ipswich, S. D.—L. B. Kraft, manager of the Farmers Equity Elvtr. Co.'s elevator, has had defective parts of the house repaired. Sections of certain walls were refitted with new material.

Lebanon, S. D.—A. C. Koch has purchased the elevator of the E. G. Ely Grain Co. Mr. Ely operated the house the past year but closed it recently on account of crop conditions.

Redelm, S. D.—The Geo. C. Bagley Elvtr. Co.'s local elevator has been closed for the season and the grain which was in it has been taken by truck to the company's elevators at Dupree and Faith.

Pierpont, S. D.—Harry Martyn, who has been agent of the Columbia Elvtr. Co.'s local elevator since 1922, has been retained as manager by the new owner of the Columbia line of elevators, the Osborne-McMillin Elvtr. Co.

Beresford, S. D.—James Hayes, of Carrington, N. D., has taken the management of the Farmers Co-op. Elvtr. Co.'s elevator here, which was closed for several months. New grain cleaning equipment is to be installed shortly.

Burke, S. D.—John Smizer, former manager of the Updike Grain Co.'s elevator at this station, has taken over the stock of grain on hand and will continue to operate the elevator independently. He will add a full line of livestock feeds.

Madison, S. D.—Fire of unknown cause wrecked the inside of the coal office of the Ketcham Grain & Fuel Co. on Aug. 2. The fire was extinguished before the outside was damaged much, but desks, chairs and equipment inside were badly damaged.

Hartford, S. D.—Fire was discovered at the elevator of the Farmers Co-op. Elvtr. Co., on Aug. 7, in the chute directly below the feed grinder, probably caused by a nail going thru the grinder and causing a spark. The top was immediately ripped off the chute and a charge of chemicals soon extinguished the blaze.

State officials of South Dakota are said to be behind an effort to compel truckers selling grain and feed to farmers in drouth sections of the state to pay the sales tax that they are supposed to pay. Under the present system truckers have the advantage over elevators, which must weigh their grain on state-inspected scales and give a ticket, whereas the trucker's word for weights between scale and farm must be accepted, also the books of the elevator must show all sales transactions and sales tax payments may be enforced, while supervising sales tax collections from truckers who sell to farmers is a more difficult matter. Elevators are governed by laws forbidding price discrimination, but truckers can pay different prices.

SOUTHEAST

Jackson, Miss.—The Great 8 Mills are liquidating.

Grenada, Miss.—The Model Mill Co. sustained wind damage to its plant recently.

Georgetown, Del.—F. L. Dodd purchased a mill sheller from the Sidney Grain Mch. Co.

Bowling Green, Fla.—Feed mixing machinery is being installed by the Lessley Seed Co.

Milton, W. Va.—The Harshbarger Milling Co. sustained damage to its electrical equipment July 30.

Ashville, N. C.—A 160x70-foot warehouse is under construction by the Earle-Chesterfield Mill Co. and feed and flour milling machinery is being installed.

TEXAS

Gilmer, Tex.—Floyd & Floyd have purchased a Sidney Cleaner.

Prosper, Tex.—A new 10-ton scale with a 22-foot deck has been installed by the Prosper Mill.

Childress, Tex.—The R. R. Robertson Co. recently installed a 15-ton scale having a 34-foot platform.

Texas elevators that recently sustained wind damage are: The Tom F. Connally Grain Co.'s houses at Capps and at Phillips, and the Rhome Milling Co., Rhome.

Navasota, Tex.—The Navasota Grain Co. is a new business here, located in the Templeman Bldg. and under the management of W. J. Montgomery. The company will wholesale products made by the Kimbell Milling Co.

Crowell, Tex.—The equipment of the Crowell and Bomarton elevators of the Self Grain Co. has been improved by installation of new truck scales, the local elevator getting a 15-ton scale and the Bomarton house a 10-ton.

WISCONSIN

Forest Junction, Wis.—We are increasing our bin capacity and installing a new Dreadnaught Corn Cutter and Grader.—Krueger Bros.

Boyd, Wis.—A small loss occurred to the mill of the Boyd Produce Co. at 8:15 a. m. on Aug. 7. Fire started by spark from backfire of engine.

Atlas (r. d. from Frederic), Wis.—The Atlas Roller Mill, owned by Harry Hawkinson, burned at about 7:30 p. m., Aug. 18. But little insurance was carried. Rebuilding is planned.

Jefferson Junction, Wis.—Construction work on the ten 34-foot re-inforced concrete tanks that have been added to the storage facilities of the Ladish-Stoppenbach Co. here, has been completed.

Manitowoc, Wis.—Henry Martens, 77 years of age, retired merchant and one of the pioneer grain buyers of this city, died Aug. 9 at his home in this city. Two years ago Mr. Martens sustained a slight stroke, from which he never fully recovered. As a young man he joined his father, Herman, and his brother, Emil, in the grain business at Tenth and Marshall streets.

Milwaukee, Wis.—Work is rapidly progressing on the 1,750,000-bu. re-inforced concrete barley and malt house of the Froedert Grain & Malt Co., being built by Burrell Eng. & Const Co., as previously reported. The 39 re-inforced concrete tanks, 135 feet high, have been completed and the 260-foot headhouse is rapidly nearing completion. A Richardson Car Dumper for quick unloading of cars of barley is part of the machinery. The plant is expected to begin receiving grain by Sept. 1.

Luxemburg, Wis.—Hector Boncher, manager of the Luxemburg Grain Co.'s elevator for the past 32 years, has resigned on account of poor health, but will retain his interest in the business and was elected president of the company, succeeding the late Michael Arendt. Felix Vandrisse has been made manager.

Milwaukee, Wis.—A grain business is being operated here by J. Walter Rice under his own name. Offices are maintained in the Grain & Stock Exchange Bldg. and elevators are operated on both the C. & N. W. R. R. and the C. M. St. P. & P. R. R. Mr. Rice was formerly sec'y of the Froedert Grain & Malting Co.

Controllable Factors of Power Cost

[Continued from page 153]

A bucket elevator elevates grain by volume, and in direct proportion to the extent that the buckets are filled to capacity. It appears that it is more difficult to fill to capacity a high speed bucket than a slow speed bucket, and therefore a leg equipped with high speed buckets should be rated a little less in proportion than a leg equipped with slow speed buckets. In other words, there is danger of over-rating a high speed leg, and, in attempting to obtain that capacity, considerably more grain must be fed into the boot in order to fill the buckets, greatly increasing the boot friction loss and, hence, power consumption, overloading the motor or power transmission machinery.

The belt conveyor is a difficult device to determine accurately the power required to operate it at different loads, tension of belt, temperature of weather, type of bearings, and lubrication. Normally, the belt conveyor carries grain in a horizontal plane and therefore does little work. The load is friction, except for the inclined belts or lifting the grain over tripers.

By a little thought it is easy to see that this friction is divided into many factors. From many tests it appears that the flexible rubber belt has less friction than the stiff rubberized or canvas belts. It appears that properly lubricated, anti-friction bearings have about 25 per cent less friction than the ordinary grease cup lubricated sleeve bearings, and that when a belt conveyor is carrying a heavy load of grain, the power requirement is less for a belt under high tension than it is when this same belt is slack. For this same reason a belt driven from the head pulley requires less power than a belt driven from the tail pulley.

This fact has been determined—that under a temperature condition of 30 degrees Fahrenheit the power required to start the belt from rest with normal grain load on the belt, is approximately 2½ times the power required to pull the belt at normal speed loaded, and that the total power to pull the belt is in direct proportion to its length under the same load of grain. In other words a belt carrying 15,000 bus. of grain per hour, 200 feet long, will require twice as

much power as the same belt 100 feet long. Experience has taught that the double squirrel cage, high starting torque motor will permit using motors of much lower horsepower rating than has normally been considered necessary for conveyor belts. This reduces the first cost, and very materially the operating cost.

The Dust Collecting System: There is one other very important device or system used in a terminal grain elevator which in many cases consumes more energy than all of the rest of the machinery combined—that is, the dust collecting system. It appears that the dust collecting system is often an afterthought—something that has been installed in the plant from necessity under threat of suspension of operation, and apparently many installations have been made with the thought of keeping the initial investment to the lowest possible figure. Single fans of rather large capacity have been installed with the idea of saving as much space as possible, either in the basement, on the workfloor, cleaner floor, or bin floor, attempting to collect the dust from many remote locations and exhausting the dust-laden air to collectors some distance away. The resistance to the flow of air through such ducts is tremendous. The velocity of the air must be high in order to hold the dust in suspension. Such installations require long runs of air ducts and many sharp bends.

Many machines are connected to such a system whether they are in operation or not. The one system must be ready to serve all portions of the elevator should it be in operation. The power requirement and energy consumed by such systems are invariably very high and represent a large portion of the total power consumed by the elevator. A number of small systems divided somewhat by departments or by the use of the elevator machinery have been found to be much more economical in power consumption, quite often less expensive to install, and occupying less valuable space.

(To be concluded in the next number)

Corn ground for domestic use during June is reported by the Corn Industries Research Foundation as 5,079,732 bus., against 4,027,941 in June, 1935.

From July 1 to Aug. 15 the Uhlmann Grain Co. estimates that 12,000,000 bus. of corn have been purchased for shipment from Argentina to the United States.

The Canadian Wheat Board has withdrawn its protection over night under which it would supply exporters at ¼ cent above the preceding close at Winnipeg. No explanation was given, but it is likely the Board had not enough wheat on hand; and in fact 10 days later, Aug. 13, it was announced the last of the government's holdings of cash wheat had been sold. The guaranty of 87½c to producers was continued Aug. 20. This is the same figure set by the Bennett administration in September, 1935; but 15c below the current market.

RANDOLPH GRAIN DRIERS

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Field Seeds

Louisville, Ky.—Preston W. Hardin, owner of the P. W. Hardin Seed Co., died recently, aged 82 years.

Indianapolis, Ind.—The Warren Seed Co. is now occupying its new 25x100 ft. reinforced concrete store building.

Hartsville, S. C.—The Humphrey-Coker Seed Co. has purchased a Standard Seed Cleaner or the Sidney Grain Mch'y. Co.

Louisville, Ky.—The Huber Seed Co. has been incorporated by H. E. and Eleanor M. Huber and Catherine E. Humble with \$10,000 capital stock.

Shenandoah, Ia.—The Earl May Seed Co. has bought radio station KGBZ at York, Neb., and by discontinuing its operation will have full time on that wave-length for its station KMA.

Ft. William, Ont.—Receipts of flaxseed during July were 77,548 bus., compared with 74,874 bus. in July, 1935. July shipments were 44,462 bus., compared with 165 bus. in July, 1935.

All North America will suffer this season from a seed shortage as acute as any in the history of the continent, it is declared by W. T. Weiner, sec'y of the Canadian Seed Growers Ass'n.

The government is repeating its warning of last year against the purchase of rye falsely represented to be of the Abruzzi variety, for supplies of Abruzzi apparently are much smaller than last year.

The Council of Regional and State Seed Ass'ns was organized at the Dallas, Tex., seed trade conventions, with Wm. P. Wood, of Richmond, Va., chairman; L. H. Archias, of Sedalia, Mo., vice chairman, and W. G. Quarles of Raleigh, N. C., sec'y.

Council Bluffs, Ia.—The Ouren Seed Co. is doing some remodeling on its plant here. A new cob, dust and shuck house is being built on the west side of the elevator, and a new 20-ton Howe Truck Scale is being installed in the driveway. The Van Ness Const. Co. has the contract.

Omaha, Neb.—Beware of seed wheat peddled by itinerant truckers. An extensive wheat grower in Kansas says, "Some of the wheat trucked in is not fit for seed." Truck peddlers in Kansas pay no attention to state laws. Fake labels are used and seed is not tested. Also seed grains are sold by them which are not adapted to our land and climate.—J. N. Campbell, sec'y Nebraska Grain Dealers Ass'n.

Toledo, O.—Henry Hirsch died Aug. 13, age 83 years. A native of Germany, he came to the United States at the age of 17 and engaged in the seed business at Archbold, O., later re-

moving to Toledo. Failing health forced his retirement several years ago. He is survived by the widow, Mrs. Belle Hirsch, a daughter, Mrs. S. L. Wolfe, and two sons, Harry and Seymour, partners in Henry Hirsch & Sons. He was a highly esteemed member of the Toledo Board of Trade.

Plans for the purchase of \$10,000,000 worth of seed grain for farmers in the drouth area were announced Aug. 20 by Jesse W. Tapp, chairman of the drouth com'ite of the U. S. Dept. of Agriculture. Funds have been advanced by the F. C. A., and the purchase of 7,000,000 to 9,000,000 bus. of small grain would be supervised and underwritten by the Federal Surplus Commodity Corp. The seed will be held until next spring. Purchases would be made thru the Farmers National Grain Corp.

Grants Pass, Ore.—In field inspections made to determine the amount of white clover in Ladino fields, 78.4% of the 757 acres being grown for seed in Josephine county passed the highest grade, according to O. K. Beals, crop specialist for the Oregon State college extension service. Ladino clover growing for seed has developed rapidly in Josephine during the past few years, the seed being sold for cover crops as well as productive dairy pasture on irrigated lands.—F.K.H.

Trials in Nebraska show that it is practical to use bluegrass seed strippers to harvest blue grama seed. The first year, 1934, it cost \$626.35 to harvest 788 pounds of seed, or 79 cents a pound. With experience and a better arrangement of machinery last year it cost only 19 cents a pound to harvest a much larger quantity tho lower in purity and germination. The cost of harvesting, the yield, and the viability of the blue grama seed collected, are reported in the new Circular 4021-C which may be obtained from the U. S. Dept. of Agriculture, Washington, D. C.

Ontario, Ore.—The Andrews Seed Co. last spring installed equipment for separating dodder from seed. In April many lots of clover and alfalfa were cleaned and samples sent to the seed testing laboratory at Corvallis. In none of the 50 samples was dodder found. Several lots of Grimm alfalfa were raised to higher grade. Two carloads of heavily infested seed were shipped from Boise, Idaho, to Ontario by Northrup, King & Co., for cleaning, and many lots of seed from other parts of Oregon have been received for recleaning by this efficient machinery.

Relief wheat, a new hard red winter wheat fairly resistant to most forms of covered smut occurring in Utah, is a selection from a Hussar \times Turkey 26 cross made at the station, and is described in a recent bulletin by the Utah Exp. Station. It resembles Turkey in appearance and the yield, quality, growth habit, and date of maturity are about the same as for Turkey or Utah Kanred. Besides its resistance to various forms of covered smut, which has caused heavy losses in central and northern Utah and southern Idaho, it also appears equal in all other respects, such as yield, winter hardiness, and quality, to the better wheat varieties currently being grown in the region.

Although seed treatments with materials which will kill external disease germs have been recommended, the use of such materials to protect the seed and young plants from underground insects is of no value, according to J. J. Davis, head of the Entomology Department of the Purdue University Agricultural Exp. Sta. Numer-

ous seed treatment experiments have been conducted in Indiana and other states with mercury compounds, sulphur, turpentine, poisons, tar and other materials frequently suggested, and in no case have they proven of any value in repelling or controlling such underground insect pests as white grubs, cutworms, wireworms and root-worms. In many cases the treatments have been definitely harmful to the seed and the growing plant.

Washington, D. C., Aug. 11.—The timothy seed crop is less than one-third as large as last year's crop of 128,223,000 pounds, while reedtop appears to be around 40 per cent of last year's production of 9,750,000 pounds. There is a relatively large carry-over of timothy and reedtop, a fair sized carry-over of bluegrass seed, and much above normal stocks of sudan grass seed. The crimson clover seed crop of approximately 1,000,000 pounds, is about one-third smaller this year than last. White clover is a substantially larger crop than last season, altho the 1935 crop of 450,000 pounds was much below normal. The carry-over of clover seeds is unusually small.—A. G. Black, chief of Buro of Agricultural Economics.

A Disease Resistant Milo

By A. D. JACKSON

Strains of milo that have proved resistant to the new plant disease known as milo rct or milo blight have been developed and have shown complete resistance in soils that are known to be infected with the disease and where the ordinary non-resistant strains have succumbed almost 100 per cent to the disease. R. E. Karper, Vice-Director of the Texas Experiment Station who has been making intensive studies of the grain sorghums for many years and who has been directing the station forces in the general attack on this milo disease, and J. R. Quinby, Superintendent of the Chillicothe Station, have been working together in the search for resistant strains. These workers state that it was early recognized that the most effective approach to the solution of this problem lies in the development of resistant strains.

Seed treatment is ineffective and soil treatment would be impractical, but resistance seems attainable and promises to give an early solution to the problem. Last year these workers undertook a program of breeding and selection work looking toward the establishment of strains of milo that are resistant to this disease.

Selections were made on the farm of J. C. Miller at Miles, Texas, where a high degree of infection was found and where the disease destroyed more than 40 per cent of the milo crop. With the assistance of Elmo V. Cook, County Agent, Runnels County, a large number of plant selections were made from surviving plants in this field. The Experiment Station workers tested these selections in diseased soil last winter in the Experiment Station greenhouse at College Station, checking the selections against the well known susceptible strains that are available for planting. A number of the selections showed complete resistance while the old varieties completely succumbed on the diseased soils.

The selections showing resistance were planted back on the Miller farm this year and though weather conditions did not favor the development of the disease, some infection was obtained in the susceptible milo and in a few of the selections, but most of the selections show immunity thus verifying the results found last winter in the greenhouse. Plantings of these resistant strains have been made on experiment stations at Chillicothe, Lubbock, and Spur, with a view of further selections for high yield, uniformity, and other desirable characters. From these trials, the best strains will be further tested in the greenhouse this coming winter and strains showing both resistance and other good qualities will be preserved and increased plantings of inbred seed will be made and it is believed that within a very few years, sufficient seed of a new disease-resistant strain will be

Directory

Grass and Field Seed Dealers

CRAWFORDSVILLE, IND.
Crabbs, Reynolds, Taylor Co., clover, timothy.

GREEN SPRINGS, OHIO
The O & M Seed Co., seed merchants.

PAULDING, O.
Stoller's Seed House, wholesale field seeds.

ST. LOUIS, MO.
Mangelsdorf & Bro., Ed. F., wholesale field seeds.
Scott, T. Maurice, field seeds, carlot originator.

SAULT STE. MARIE, MICH.
See Terminal Co., grass, flax, peas.

SIOUX CITY, IOWA
Sioux City Seed Co., seed merchants.

available for planting the entire milo acreage in Texas.

This undoubtedly is the most prompt arrest the Experiment Station has been able to make of a sinister threat to an important crop. This destructive disease which has attacked the milo crop is known as milo rot or milo blight and has been found during the past few seasons attacking the milo crop in several areas of west and southwest Texas. The worst outbreak has occurred in a region in southwest Texas, involving 8 or 10 counties, principally Runnels, Tom Green, Taylor, Coleman, McCulloch, Concho, Coke, and Nolan, where approximately 3½ million bushels of grain sorghum is grown annually, about 80 per cent of which is milo. The milo rot disease was estimated last year to have killed outright from 35 to 50 per cent of the milo crop in this area and may be estimated to have cost the farmers of these few counties in one year more than a million dollars.

Misbranding of Seeds

The U. J. Cover Seed Co., Mt. Gilead, O., in March, 1935, shipped red clover seed to Lewisburg, Pa., which was tested by the State of Pennsylvania and found to be misbranded in violation of the Federal Seed Act. The seed was labeled to indicate it contained 99.25% pure seed .26% of other crop seeds, and .20% of weed seeds. It was found to contain 88.97% pure seed, 8.18% of other crop seeds, and 1.70% of weed seeds. Upton J. Cover and Allen B. Beverstock, co-partners in the firm, entered a plea of guilty and were fined \$10.

In March, 1932, Allen B. Beverstock, mentioned as a partner in the U. J. Cover Seed Co., shipped four bags of red clover seed from Chatfield, O., to Appalachia, Va., under the name, Lexington Elevator & Mill Co. The seed was labeled 99.50% pure seed and .08% weed seeds, but an official test showed it to contain 85.41% of pure seed and 4.67% of weed seeds. In May, 1936, upon a plea of nolo contendere a fine of \$200 and costs was imposed.

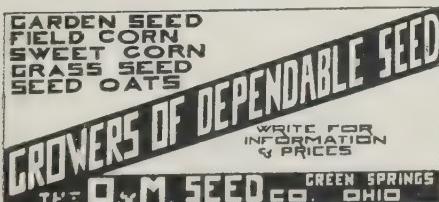
The Royal Staflolife Mills, Meridian, Miss., shipped 30 bags of rye seed to Mobile, Ala., where it was found to be misbranded as to purity, weed seeds, noxious weed seeds, and germination. Twenty-nine bags were seized, and the court ordered destruction of the seed.

The Largen Lespedeza Co., Fayetteville, Tenn., shipped to Talladega, Ala., bags of lespedeza seed which was found to be misbranded as to purity, weed seeds, inert matter, and noxious weed seeds. Seven bags of the seed were seized and destruction ordered by the court.

The Farmers National Grain Corporation announced Aug. 20 that of the 22 regionals offered government money to subscribe for \$3,000,000 worth of stock in the Farmers National the following six had underwritten the amounts stated: Intermountain Grain Cooperative, Inc., Ogden, Utah, \$60,000; Farmers Westcentral Grain Co., Omaha, \$150,000; Farmers Union Terminal Ass'n, St. Paul, Minn., \$480,000; Ohio Farmers Grain & Supply Ass'n, Fostoria, O., \$120,000; Texas Wheat Growers, Inc., Amarillo, Tex., \$90,000; Indiana Grain Producers, Inc., Indianapolis, Ind., \$150,000; total, \$1,050,000. The government is to be reimbursed over a period of 10 years by an assessment of so much per bushel on grain handled by the co-operatives.

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"Crop Insurance the Avenue to Ever-Normal Granary"

Henry A. Wallace, sec'y of agriculture, in an address at Kansas City recently said:

We have recently been engaged in making a study of the cost of all-risk crop insurance in order to determine as far as possible an actuarial basis for such insurance on wheat. We have also undertaken to analyze some of the general problems of crop insurance in the light of this new factual material. The data for the study were primarily records of wheat acreage and production for individual farms, which were prepared as part of the wheat program of the AAA.

The premiums might be paid in grain only in years of excess production rather than to collect them every year. In most of the hard winter wheat and spring wheat counties where studies were made, premiums ranging in amount from one-third to two-thirds of the excess yield above normal, if paid only in years of good yields, would have covered the cost of insurance up to 75 per cent of the average yield in poor crop years. Such a plan would assess the costs only against those years in which there was a surplus production and, assuming that no decline in prices occurred in such years, the burden should be relatively lighter. The fact that a part of the surplus production is taken off the market would tend to prevent a weakening of the prices.

This plan, if adopted on a national scale, would really become the ever-normal granary plan, with crop insurance requirements serving as an automatic regulator. In years of surplus a part of the crop would be drawn off the market and put into storage, and such amounts would be definitely fixed, being based on predetermined rates necessary to indemnify losses in bad crop years. In years of crop failures the grain would be released and the amount would be automatically determined by the indemnities to be paid. The accumulated reserves of grain would automatically go to those who needed it most, those whose income had been destroyed.

It is a very important point that, since the plan would operate automatically, with the grain released from storage only in case of crop failure, the grain in storage would not be a potential supply on the market tending to depress the price.

Such a plan would be in effect an insurance pool in the form of wheat. By using a commodity plan exclusively the problem of price hazard and price insurance would be removed from the picture. If the insurance agency guaranteed a given number of bushels but collected the premium in cash, it would have to gamble on the price of wheat needed to make good its contracts. Similarly, if it paid deficiencies at a fixed price per bushel, it would be engaged in a gamble not only for crop insurance but for price insurance.

Total supplies of wheat in the United States for the 1936-37 season are large enough for the usual domestic requirements, with short supplies of two types—red spring wheat and durum, the Bureau of Agricultural Economics said Aug. 14 in its annual midsummer wheat outlook statement. As a result, imports of the two will continue.

Gave Grain Dealer Worthless Checks for Corn

Audubon, Ia.—Al Smith, a trucker of Shambaugh, Ia., was held to the Audubon county grand jury recently by Justice of the Peace Arthur Horning, charged with drawing checks without funds.

The complaining witness was C. H. Walter, manager of the Walter Grain Co. of Hamlin, who accused Smith of giving him six checks in payment for corn purchased, totaling \$656.40, on the Citizens State bank of Clarinda.

Walter said that on April 29 he entered into an agreement with Smith to delay prosecution on condition that Smith pay him \$50.00 in cash and \$40.00 every two weeks thereafter until the amount of the checks was made good. After paying \$50.00 Smith made no further payments. Smith's bond was fixed at \$1,000.00 by Justice Horning.

Government Wheat Control in Italy

At a meeting of the Permanent Wheat Comite (Comitato Permanente del Grano) in Rome on June 15, 1936, a new law was announced under which complete control of all wheat trade in Italy was assumed by the Italian Government.

Within 30 days of threshing all wheat growers are required to deliver their wheat to local comites to be sold for their account, being paid the full price for the first 367 bus. delivered, out of loans obtained by the local comites from banks. The balance will be paid for in installments.

Flour mills are forbidden to mill wheat not obtained from the local comites.

Importation of wheat by private firms is forbidden. Fines equal to the value of the wheat will be levied upon persons found guilty of withholding supplies from the local comites.

The basic sale price, which will remain valid throughout the season, is that fixed for wheat of "good merchantable" quality. This price is to be paid from wheat in bulk at the producer's warehouse and is to be increased each month, beginning with July 1, by 1.00 lira per 100 kilos (2.1 cents per bushel) for soft wheat and by 1.20 lira (2.6 cents per bushel) for hard wheat.

The Permanent Wheat Comite with the approval of other interested organizations, has already fixed the basic price for the 1936 crop at 108 lira per 100 kilos (\$2.32 per bushel) for soft wheat and 123 lira (\$2.64 per bushel) for hard wheat.

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The GRAIN DEALERS JOURNAL

Grain Carriers

Pittsburg, Kan.—The Trans-Missouri-Kansas Shippers Advisory Board will hold its meeting here Sept. 22.

Seven steamships were chartered early in August to load 51,000 tons of Argentine corn for the United States.

Reduced rates on corn from Chicago to Peoria and St. Louis ex-lake of 5½ and 9½c per 100 lbs. are expected of the railroads to distribute Argentine corn coming via Montreal.

Carriers serving parts of Washington, Oregon, Idaho, California, and other western states have granted rate reductions on joint hauls of hay and roughage into the Dakotas and Montana.

Portland, Ore.—Rates on grain from Willamette Valley points to Portland and Vancouver, Wash., have been increased effective Aug. 13. It is expected more grain will be shipped by truck.

Cars loaded with grain and grain products during the week ending Aug. 8, totaled 46,451, against 41,466 cars during the like week of 1935 as reported by the Ass'n of American Railroads.

Lincoln, Neb.—The Nebraska Railway Commission will send rate expert C. A. Ross to a conference at Chicago, Aug. 28, in an endeavor to get lower rates on grain over the Union Pacific from panhandle points in the state.

The Interstate Commerce Commission has issued an order that trucks carrying freight will be required to have insurance of \$10,000 against personal injury, \$2,000 against property damage, and \$1,000 against damage to the freight carried.

Low water in the river has forced the federal barge line to discontinue operations above Dubuque, Ia., and the 7-day trip from St. Louis to New Orleans has been lengthened to 12 days. At La Crosse the Mississippi has dropped to the lowest level on record.

To meet truck competition the Interstate Commerce Commission has authorized the C. B. & Q.; U. P.; Great Western and Colo.

& Southern to maintain reduced rates on whole grains from central and western Nebraska to northern Colorado and eastern Wyoming.

The Interstate Commerce Commission on Aug. 17 continued until Dec. 2 its order restraining the Keshin Motor Express and the C.G.W. R.R. from establishing joint rates. The original postponement was until Sept. 5. Meanwhile the trucks are being moved on flat cars.

Unreasonably low tariff rates for trucking are alleged by the Midwest Motor Freight Tariff Bureau in a complaint filed Aug. 22 with the Interstate Commerce Commission against 74 trucking companies operating in Illinois, Iowa, Nebraska, Wisconsin, Minnesota, Colorado, Wyoming, Missouri, Kansas, Oklahoma, Arkansas, Tennessee, Louisiana and Texas.

Effective Oct. 1, contract motor carriers will be required to file actual and not merely minimum rates on charges, with the Interstate Commerce Commission. The Commission had been informed that filing of minimum charges meant nothing at all as far as the public was concerned, being way below the cost and no guide as to what was actually charged. The Commission will require every contract to be filed.

In 25980 the Interstate Commerce Commission found that rates on alfalfa and red and alsike clover seed from Southern Idaho and Utah to points in official territory are unreasonable to the extent that they may exceed rates made 35%, and 32.5% to points in Iowa, Missouri, Kansas, Nebraska, the Dakotas, Colorado, Wisconsin and Michigan. Carriers are to establish rates on basis shown not later than Oct. 24.

All but one of the many witnesses testifying at Chicago before Examiner Archer on pick-up and delivery, favored the service, with an allowance for those shippers who desired to perform the service for themselves. The Grand Trunk Western had free pick-up and delivery from 1859 to 1907, a charge from 1907 to 1914, when it was abandoned on charges of discrimination. It was put back in 1933 and stopped the downward trend of merchandise tonnage.

Reductions in freight rates on hay and roughage into officially designated drouth counties of Colorado, Kansas, Minnesota, Missouri and Nebraska have been approved by the western railroads, the executive

com'ite of the Western Trunk Line Ass'n announced Aug. 14. The request by the U. S. Dept. of Agriculture for reduced rates on concentrated feed such as corn, oats, cottonseed cake and soybean meal was denied.

Seattle, Wash.—After extended negotiations with rail lines, the hay committee is able to announce a considerable reduction in hay and straw freight rates within the state of Washington. Reductions will be effective Aug. 25, 1936, and will apply on minimum carloads of 28,000 lbs. The reductions expire on Dec. 31, 1936, but may be extended if rail lines find that traffic conditions turn out as predicted by our hay committee.—Floyd Oles, mgr. Pacific N-W Feed Ass'n.

Bismarck, N. D.—The North Dakota Railroad Commission has held hearings at Fargo, Grand Forks and Bismarck. The three cases before the railroad board include a general investigation of North Dakota grain and seed rates, undertaken by the commission itself; and two formal complaint proceedings initiated by shipper interests, involving railroad rates on seeds, grain and grain products, and the rules, regulations and transit privileges applicable to the movement of grain within the state.

The Fort Worth Grain & Cotton Exchange has petitioned the Interstate Commerce Commission to modify the decision in No. 17000 to permit the railroads to determine the number of free transit stops on grain and grain products, alleging the limit of two free stops has worked to the great detriment of those who have built facilities for storing, grading, cleaning, blending and milling of grain. "Under the existing situation we must hand-pick our purchases and the grain is left in the country subject to truck solicitation."

By reference to the 35-year Bruckner weather cycle, evidence is adduced by E. R. Miller in **Sci. News Letter** to indicate a sudden and sharp return to moister and more comfortable summers in the United States.

Policing Trucked Grain Against Transit

"Since the advent of truck competition it has become highly desirable for the rail carriers to require that shippers keep their records of truck tonnage separate from the records of rail tonnage," said the Interstate Commerce Commission in approving proposed changes in the carriers' transit rules, in I. & S. No. 4168, covering grain and grain products.

Shippers will be required to give notice in writing of intention to open a transit account.

Grain and Products Rates from S-W to C.F.A. Territory

The Chicago Board of Trade has filed a brief and argument in **S. W. Millers League v. A., T. & S. F., I. C. C.** docket No. 15037 not objecting to the League's desire for equal rates with Minneapolis, distance considered, to C. F. A. territory, provided, the lowest proportional rates in effect at the present time from Chicago are applied when from origin points from which there are no one-factor thru rates to points in C. F. A. territory.

The Board of Trade is opposed to any increase as proposed by the Eastern carriers in the ex-Trans-Mississippi rates from Chicago to C. F. A. territory, and declares that: The territory East of the Illinois-Indiana State line, to which Peoria should have the benefit of the Chicago ex-northwest rates, should be confined to that part of it which lies on, south and west of the line of the Pennsylvania Railroad from Effner, Ind., to Cincinnati, thru Logansport, Hartford City, and Richmond, Ind.; and the ex-T. M. rates from Chicago to points in Michigan should be no higher than the ex-T. M. rates from Milwaukee to Michigan points.

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Feedstuffs

Glen Ridge, N. J.—Louis E. Thompson has been appointed sec'y-treas. of the Eastern Federation of Feed Merchants.

Redmond, Ore.—The Central Oregon Feed Dealers Credit Ass'n was formed here recently at a meeting sponsored by the Oregon Feed Dealers Ass'n.

San Francisco, Cal.—July receipts of feedstuffs were: Bran, 492 tons; beans, 24,500 sacks; hay, 132 tons, compared with bran, 278 tons; beans, 17,000 sacks; hay 324 tons, in July, 1935.

Cane stunted by drouth is dangerous if fed to livestock before it is cut and cured. It may carry a deadly poison, prussic acid. But the poison disappears when the forage is cut and cured.

The drouth com'ite of the U. S. Dept. of Agriculture announced Aug. 18 that the A. A.A. had shipped or ordered shipped 376 car-loads of feed to drouth stricken states since early June.

Cincinnati, O.—July receipts of feedstuffs were: Grain sorghums, 2,800 bus.; feed, 1,290 tons; hay, 3,806 tons, compared with grain sorghums, 2,800 bus.; feed, 600 tons; hay, 231 tons, in July, 1935.

Washington, D. C.—Distillers dried grains output during July totaled about 21,470 tons compared with a revised figure of 23,260 tons during June. Shipments during the month aggregated 22,720 tons leaving stocks at plants of only 1,110 tons.—Buro. of Agricultural Economics.

Washington, D. C., Aug. 14.—Alfalfa meal production during July totaled about 24,200 tons, compared with 25,100 tons last year, and 21,800 tons during the severe drouth two years ago. Stocks on hand at mills totaled about 20,500 tons, compared with 20,700 tons June 30.—Buro of Agricultural Economics.

Des Moines, Ia.—Organizers of the Independent Feed Dealers Ass'n of Iowa held their

third meeting Aug. 4 at the Hotel Savery and planned a big convention at the Savery Sept. 15 and 16. Dues for Class A, B and C members are to be \$10, \$15 and \$25 per year. Geo. H. Schaaf is temporary pres., and W. C. Berger temporary sec'y.

State College, N. Mex.—A total of 3329 feeds had been registered in New Mexico at the close of business, June 30, 1935. A total of 769 registrations were completed during the year. After deducting the 609 registrations canceled, there was a net gain of 160 feed registrations for the year. Receipts of the feed and fertilizer control office were, from commercial feeding stuffs tax tags and stamps \$12,612.17; commercial fertilizer tax tags and stamps \$616.52; commercial fertilizer registration fees \$155.00; laboratory fees \$86.00. Disbursements were \$10,006.36.

Kansas City, Mo.—The livestock feed agency set up at Kansas City by the Buro of Agricultural Economics as a clearing house of information to the feed shortage caused by drouth has completed its organization and made the first survey of hay and forage supplies. Nearly 200,000 cars of hay and straw were listed for sale by shippers in surplus areas and the Kansas City office states that it is now able to advise feeders and dealers in drouth areas where feed supplies may be obtained most advantageously. It has developed that sellers are more numerous than buyers.

New Haven, Conn.—During 1935 the Connecticut Exp. Sta. examined 1,320 samples of feeding stuffs. E. M. Bailey, chief chemist, in charge, reports that on the 850 official samples examined, there were 2,536 guarantees, including protein, fiber and fat in each sample except those that omitted the fiber content. These guarantees were substantially met or exceeded in 95 per cent of the products. Similar figures for the past two years have ranged from 92 to 96 per cent. Of 47 samples by Park & Pollard Co. 2 were deficient in protein, 3 had excess fiber and 13 were deficient in fat.

Chicago, Ill.—Allied Mills net income for the year ended June 30 was \$2,539,702, equal to \$2.06 a share on capital stock. This showing compares with \$2,090,963 earned in the 1934-35 year, equal to \$2.35 a share. All divisions of the business are stated to have contributed to the excellent showing, except the seed division. Just before the close of the company's year the directors decided to curtail activities in that division, the president stated, "in the belief that, while that division has produced some profit, returns have not been proportionate to the amount of capital required and the somewhat speculative character of that business."

Washington, D. C.—The Nation's livestock feed supplies, while greatly below the 1928-32 5-year average, are in general more ample than two years ago when the severe drouth forced the liquidation of large numbers of livestock, Sec'y of Agriculture Wallace said Aug. 13. According to the analysis, the 1936 feed grain production per animal unit is only 62 per cent of the 1928-32 average but 114 per cent of the small production during 1934. "The fact that the drouth struck sufficiently late so that hay matured, and the emphasis placed on increased plantings of grasses and leguminous crops under the A.A.A. programs, are important factors in the favorable hay situation this year as compared with that in 1934."

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The GRAIN DEALERS JOURNAL

Mill Feed Regulations Under Commodity Act

The Commodity Exchange Administration held a hearing at St. Louis Aug. 4 on proposed regulations, J. M. Mehl presiding.

HERMAN STEEN, sec'y of the Millers National Federation, Chicago, requested that the rules on mill feed be made as liberal as possible.

C. H. WILLIAMSON, St. Louis, said the mill feed futures market needed freedom for its development.

CHAS. B. DREYER, Kansas City, favored cross trading. "The broker or commission merchant will bid and offer the market to within 5c a ton apart. If unable to trade at either the bid or asked figure, he will get a name, which is, of course, the same as a cross trade. These cross trades are made only after public outcry on the exchange floor and in the pit. There is absolutely no cross trading in offices.

"Cross trades are not wash sales or any attempt to establish fictitious values. If cross trades are entirely discontinued, it would be necessary when having both buying and selling orders to trade with others and invariably it would be necessary to buy at one price, then sell at another price, and very often the price paid to fill the buying order would be higher than the price obtained on the selling order, giving the scalper a decided advantage at the customer's expense.

"In the mill feed futures market, the broker and commission merchant should be permitted to trade under the same conditions as prescribed for cotton brokers and commission merchants under the Commodity Exchange Act."

J. P. PARKS, Kansas City: There is no such thing as a visible supply of mill feed. Warehouse deliveries are not a part of our rules. There is no federal standard except the definitions of each individual mill feed.

Our market is young, and it is in its development. Our maximum trade in any one day in Kansas City, 6,000 tons, which at \$25 per ton would figure \$150,000, is only equivalent to 150,000 bus. of wheat traded in \$1 a bushel. Now, I want to get that picture before you. In other words, mill feed.

EUGENE C. DREYER, St. Louis: This industry has not been established for a sufficient length of time to establish certain fixed rules such as may be adopted around grain exchanges. The feed, to begin with, is an offal of a manufactured product. It is not amiss to state here that mill feed is an offal and not a manufactured product. The heaviest movement of mill feed is usually during July, August and September, or, in other words, during the movement of the new winter and spring wheat crops. In addition thereto, these are usually the hottest months of the year, and rarely ever is feed therefore during these months placed in storage, for the reason that, unless in a large roomy warehouse, well spread out, the bran in particular would be inclined to heat and become badly damaged.

The Commodity Exchange Act, Section 5 (A), sub-paragraph 7, indicates that commodities must be delivered from warehouses. The rules of both Kansas City and St. Louis Exchanges do not provide for warehouse delivery, but track deliveries only. Under this act it will be practically impossible of performance, plus the fact that it will entail quite an additional expense, not only in the cost of warehousing and switching, but at many times put this feed in an out of line position to go to the destination desired. In addition thereto, the ultimate customer would be paying a great deal higher price for his feed, and this applies to the dairyman, farmer, etc., in particular. There is no federal supervision or inspection covering mill feeds.

To Aug. 14 970 counties in 22 states had been designated emergency drouth areas entitled to government relief and to reduced freight rates on stock out and feed in.

Oil Meals and Tankage for Beeves

For fattening baby beeves it does not make much difference in the rate of gains whether linseed oilmeal, soybean oilmeal, tankage or a combination of these is used, is the conclusion drawn by C. C. Culbertson, in charge of feeding experiments at Iowa State College, in reviewing the year's feeding tests at the annual Iowa Cattle Feeders' "Hey Day" at Ames, Aug. 14.

Summing up the results of the past 2 years' feeding trials, Mr. Culbertson says the relative prices of the different protein supplements should determine which one to use. If tankage is unusually low in price, it might profitably be substituted for some of the more commonly used supplements. If soybean oilmeal is much cheaper than linseed oilmeal, it may be used satisfactorily. The feeding trials indicate that it would be desirable to finish the cattle with linseed oilmeal or to mix it with the other protein supplements.

The big difference in the steers this year, as in last year's tests, was not in the rate or even in the cost of gains, but in the finish the cattle showed. The lot which gained fastest and showed the best finish was the check lot which got linseed oilmeal as the protein supplement. The average gain for 8 months was about 2½ pounds per steer a day.

Here is the daily ration fed to the check lot steers: As much shelled corn and corn silage as they would clean up in two feedings; ½ ounce of minerals per steer fed on the silage; 1 pound linseed oilmeal for the first 10 days, and 1½ pounds for the remainder of the feeding period. Salt was kept before the steers at all times.

All of the other lots were fed exactly as the check lot except that the protein supplement was varied. One lot got dry-rendered tankage as the protein supplement in place of oilmeal. Another got wet-rendered tankage. The tankage-fed steers made good gains and grew, but as in the tests the previous year, they lacked finish. Oilmeal replaced the tankage in two other lots for the last 3 months to determine whether it would give the desired finish. The calves did show a better finish than those on tankage only,

but not as good as those fed oilmeal the full feeding period.

The poorest gains were made by the lot fed soybean oilmeal made by the solvent process. The gains were about a fifth of a pound per day less than made with linseed oilmeal. The steers fed the soybean oilmeal made by the expeller process, the kind ordinarily sold in Iowa, made satisfactory gains.

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Alfalfa meal	Kelp
Beet pulp	Limestone
Blood, dried	Linseed meal, cake
Bone meal	Meat meal, scrap
Brewer's dried grains	Mill feeds
Buttermilk, dried, semi-solid	Minerals
Calcium, carbonate, phosphate	Mineral Mixtures
Cocoanut oil meal	Molasses
Cod liver oil	Oyster shell, crushed
Charcoal	Peanut meal
Commercial feeds	Peat moss
Corn germ meal	Phosphates, rock
Cottonseed meal, cake	Potassium iodide
Dog food	Poultry grits
Feed mixers	Rabbit feed
Feed concentrates	Salt
Percentage feeders	Sardine oil
Fish meal	Screenings
Formulas	Sesame meal
Gluten, feed, meal	Skim milk, dried
Hammer mills	Soybean, meal
Iodine	Tankage
	Vegetable oil
	Yeast for feeding

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Ignition of Distillers and Brewers Grains

Distillers grains may ignite within 24 hours after leaving the drier, or several days later in cars during shipment or after unloading.

Effective cooling of the grains has been found to prevent ignition. Chemists hold that in general the rate of chemical reactions doubles with every 10-degree rise in temperature. An efficient method of cooling the grains is to run it thru a cooler containing paddles to stir the grains, aspiration changing the air in the cooler to carry off the heat. This process has the same effect as shoveling the grains over many times.

Tests have shown that between the drier and the sack the grains will absorb moisture from the atmosphere, increasing its content from 3% to 7%. This rapid absorption of moisture causes rapid oxidation, generating heat, and induces spontaneous ignition.

It is therefore recommended that the grains be brought from the drier with that moisture content which most nearly balances the atmospheric moisture. About 9% is a safe moisture content during the summer, and that can be raised to 10% in the cold months. A slug, tho small, that contains 17.5% will be likely to cause a fire if packed in one sack and stored in the pile. Grains containing 12% present a real fire hazard.

The problem of brewers grains is almost identical with that of distillers grains.

Soybean Ass'n to Meet

The 16th annual meeting of the American Soybean Ass'n will be held Sept. 14, 15 and 16 at Iowa State College, Ames, and at Cedar Rapids and Hudson, Ia.

The Monday meeting will be held at Ames. Speakers include: Dr. O. E. May, director of the Regional Soybean Industrial Products Laboratory, Urbana, Ill., who will discuss the research program of his laboratory; M. F. Taggart, South Bend, Ind., "Using Soybean Oil in Paint"; Dr. G. Bohstedt, head of the Animal Husbandry Department, University of Wisconsin, Madison, "Feeding Soybean Oilmeal." The visitors will also inspect the experimental work in agronomy at Ames and visit the new federal agricultural by-products laboratory on the campus.

The Tuesday meeting will be conducted at Cedar Rapids, Ia., which is 115 miles east of Ames on the Lincoln Highway, U. S. No. 30.

The forenoon program will be at the Fred Sargent farm, northeast of Cedar Rapids. Mr. Sargent, president of the Northwestern Railway, is intensely interested in the growing of soybeans and their industrial possibilities. All of the farm buildings are painted with soy-oil paint. A total of 31 varieties of soybeans from all of the principal producing states are growing on the Sargent farm, and will be discussed by various authorities. Dr. W. L. Burlison, chief in agronomy at the University of Illinois, Urbana, will report on experiments with soy-oil paint conducted at the University.

Speakers on the banquet program Thursday evening will include Dr. Sybil Woodruff, home economics department, University of Illinois, who will present, "Soybeans for the Homemaker"; and E. F. (Soybean) Johnson, of St. Louis, Mo., who will relate his observations on the possibilities of increased exports of soybean products to Europe. There will be a commercial soybean display at Cedar Rapids.

The Wednesday meeting will be held at the Strayer Seed farm, Hudson, Ia., 70 miles northwest of Cedar Rapids. Visitors will have the opportunity to view one of the regional soybean laboratory plots located on the Strayer farm. The tests are being conducted to determine under what conditions soybeans should be grown most nearly to meet industrial requirements.

Breeding Feeds Need Vitamin E

By AUGUST J. PACINI

An examination of the many and different commoner feeds sent for study was suggestively indicative of the shortage of vitamin E in the feeds used.

To determine whether or not this was the cause for the reproductive failures reported from the collaborating herdsmen, instructions were issued not to change the feed in any way, but merely to supplement it with measured quantities of properly prepared and biologically assayed wheat germ oil whose vitamin E content had been standardized and stabilized. In other instances, pellets made containing the same oil were used instead, merely because of their convenient form. Veterinarians have known about the value of vitamin E in correcting reproductive disorders in cattle and other animals, for some time.

This simple expedient has completely changed the situation on ten farms; and another ten farms, continuing the same feeding schedule

but without resorting to the use of wheat germ oil, or pellets, continue to report failures. It seemed quite evident, then, that the shortage of vitamin E in the feed was the factor probably associated with the greatest number of the failures reported.

It is incredible that no attention is given by compounders of feeds to the one vitamin upon which reproduction is more dependent than any other. Exact care in the measurement and dosage of vitamin A, and of vitamin D, are urged by many workers. These vitamins are excellent and serve most useful and imperatively desirable purposes. But no one appears to have sensed that the vitamin—Vitamin E—which has the correction of reproductive disorder as its main function should not be assumed to be present in feeds when so many conditions can and do arise which are definitely known to destroy it.

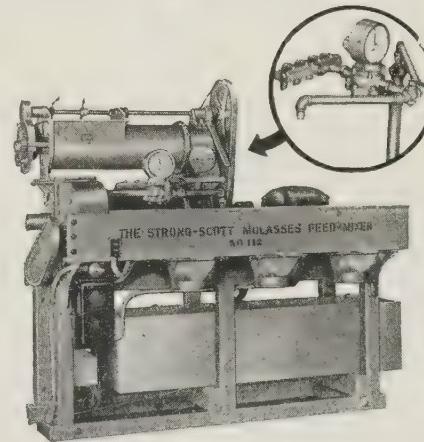
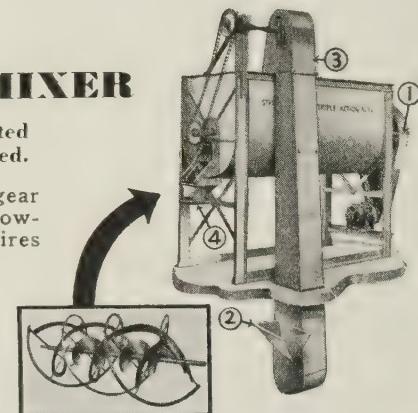
As in the case of human diets, so in the case of feeds, vitamin E is neither widespread nor over abundantly supplied. And wherever it does occur it is subject to loss, as is vitamin A.

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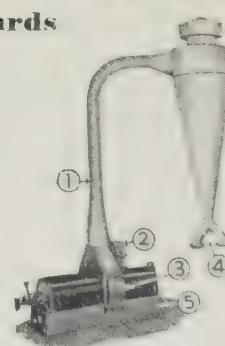
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Poultry Feeds and Feeding

A hen laid 214 eggs in 214 consecutive days at the Maine Experiment Station at Monmouth, it was reported Aug. 17, breaking state and national records.

Moscow, Ida.—The Idaho Poultry Improvement Ass'n at its three-day meeting here re-elected old officers.—F. K. H.

Washington, D. C.—The number of layers in farm flocks on Aug. 1 was about 1.5 per cent greater than on the corresponding date a year earlier, this being the same relation as was shown on July 1. Farm chicken prices on July 15 averaged 16.1 cents per pound and thus exceeded the average of 14 cents on that date last year and also the July price of any other year since 1930. This year's price exceeds the pre-war July average of 12.2 cents but is below that of any of the series of years from 1917-30. On June 15 feed prices were about 21 per cent lower than last year. On July 15 they were higher than in 1935, being 149.9 cents per 100 pounds compared with 143.7 cents last year, and the highest for that date since 1929. They also exceed the July pre-war average of 137.0 cents, but are lower than the July average for the years 1921-30. The prices received by farmers for eggs and chickens on June 15 were both relatively higher than those for feed when compared with their relation in either the pre-war or post-war period.—Buro of Agricultural Economics.

Wheat Gray Shorts for Prevention of Slipped Tendons in Chicks

Twenty per cent wheat gray shorts in rations containing from 1.20 to 1.62 per cent calcium and from .56 to .57 per cent phosphorus produced more rapid gains and fewer slipped tendons, and required less feed to produce a unit of gain in live weight in experiments 1, 2, and 3, regardless of the amount of calcium and phosphorus in the rations, than did the rations not containing wheat gray shorts. This is in agreement with the work of Graham and associates, Wilgus and associates, Branon, Milby, Titus and Ginn, and Sherwood and Couch.

In experiments 4 and 5 rations containing 1.90 to 1.93 per cent calcium, .87 to .99 per cent phosphorus, and twenty or thirty per cent wheat gray shorts, produced more slipped tendons than did the rations used in experiments 1, 2, and 3. This was probably due to the larger percentage of phosphorus in the ration, and is in agreement with the work of Insko and associates and Milby.

Rations containing thirty per cent wheat gray shorts produced more rapid gains but required slightly more feed to produce a unit of gain in live weight in experiments 4 and 5, than did twenty per cent wheat gray shorts. Twenty or thirty per cent hard wheat shorts in the rations of experiments 4 and 5 produced more rapid gains and fewer slipped tendons than shorts milled from soft wheat or blended wheat. Altho the same percentage of ingredients was used in experiments 1, 2, and 3, the rations of experiments 2 and 3 contained larger percentages of calcium than the rations used in experiment 1. This is due to the variation in the composition of the individual feeds, since a different lot of feed was used for experiment 1 than for experiments 2 and 3.

Low calcium-low phosphorus rations (1.20-.134 per cent calcium and .56-.58 per cent phosphorus), low calcium-high phosphorus rations (1.21-1.35 per cent calcium and .69-.72 per cent phosphorus), and high calcium-high phosphorus rations (1.49-1.62 per cent calcium and .69-.72 per cent phosphorus)

were fed both with and without wheat gray shorts in experiments 1, 2, and 3. The presence of wheat gray shorts in the rations had a greater effect in increasing the rate of gain, reducing the number of developing slipped tendons, and reducing the units of feed required to produce a unit of gain in live weight than did the variation in the percentages of calcium and phosphorus. The low calcium-low phosphorus ration produced fewer slipped tendons than the low calcium-high phosphorus ration or the high calcium-high phosphorus ration when no wheat gray shorts was fed. The high calcium-high phosphorus ration produced more rapid gains than the low calcium-high phosphorus ration or the low calcium-high phosphorus ration, and required less feed to produce a unit of gain than the low calcium-low phosphorus ration when wheat gray shorts was included. These results agree with those of Insko and associates, Milby and Hammond.

Several investigations including those of Graham and associates, Titus and Sherwood and Fraps, have tried to determine whether results similar to those described in this bulletin might not be caused by a vitamin. All of these investigators have made various extracts of mill feeds known to be of value in preventing slipped tendons in an endeavor to isolate and identify this corrective substance. As yet, no positive results have been published. The experiments in this bulletin were not planned to test the effects of organic and inorganic phosphorus in correcting slipped tendons. Rations which contained wheat gray shorts and which protected the chicks reasonably well contained a larger proportion of organic to inorganic phosphorus than rations not containing wheat gray shorts. There may be other substances contained in the wheat gray shorts which vary along with the phosphorus, so that it is impossible to conclude that the results are caused by the relation of organic to inorganic phosphorus in these rations.—Bull. 525, Texas Agr. Exp. Station.

Corn Bran for Growing Chicks

Experiments by C. S. Tolentino with five lots of 67 chicks each indicated that when supplemented with shrimp meal, corn bran was much better than rice bran but decidedly inferior to corn meal alone for chicks. Chicks fed corn bran or corn bran and rice bran grew more slowly than those fed corn meal or corn meal and rice bran. In rapidity of growth the rations ranked as follows—corn meal and rice bran, corn meal, corn bran, and corn bran and rice bran. In weight at 12 weeks of age there was no significant difference between the chicks fed the first two rations. In large quantities rice bran was unsatisfactory for growing chicks.

There is no marked difference in the amounts of feed consumed by the different lots. In economy, corn meal was better than corn bran or a combination of corn bran and rice bran. For growing stock the rice bran and corn meal combination was better than corn bran or rice and corn bran. Chicks fed corn bran alone or in combination were less vigorous than those fed corn meal alone or in combination. There was no great difference in the individual growth rates of the chicks fed corn bran and those fed corn and rice bran.

A trial balloon to sound out public sentiment on unlimited planting of wheat and corn in 1937 was sent up Aug. 14 by the Washington bureaucrats in an announcement that wheat acreage will be expanded, and that A.A.A. leaders had indicated privately payments for soil conservation next year would not be conditioned on reduction of wheat or corn area.

Mineral and Vegetable Protein Supplements for Chickens

D. C. KENNARD and R. M. BETHKE,
of Ohio Exp. Sta.

The successful use of vegetable protein concentrates for poultry feeding necessitates the use of suitable mineral supplements. That the value of animal feeds is due to their minerals, as well as their proteins, and that vegetable feeds are low in essential minerals was first discovered by Dr. W. P. Wheeler of the Geneva, N. Y., Station in tests conducted in 1898-1899 (1). When he corrected the mineral

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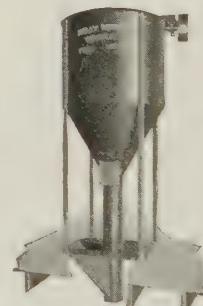
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Poultry Feeds and Feeding

By Harry M. Lamont & Alfred R. Lee

A book of 247 pages (14 chapters, 23 illustrations), designed to meet the needs of all interested in feeds for poultry. Grains, rations and methods used in every section of the U. S. are discussed.

Part I is devoted to the principles of feeding, explains which elements have been found essential in feeding poultry and tells why certain combinations are made. Every grain or feed-stuff used for poultry is discussed in Part II. Rations for every class of poultry keepers are included in Part III.

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differences, the results with the vegetable feeds were comparable to those obtained with animal products. Nevertheless, the question of minerals in poultry rations received little attention by poultry investigators until 15 to 20 years later when this important subject received serious consideration. Extensive tests and critical studies were then conducted by a number of research institutions, notably by the Indiana and Ohio Experiment Stations and the U. S. Bureau of Chemistry. Much valuable information was secured as to the mineral requirements of poultry which led to the successful use of vegetable protein concentrates in poultry rations.

A complex mineral mixture was first supposed necessary, but later tests with various mineral mixtures proved that a simple, inexpensive mixture of bone meal, high calcium limestone or oyster shells, and sodium chloride (salt) effectively provided the minerals necessary for correction of the mineral deficiencies of vegetable feeds.

Essential Minerals and Chief Sources for Poultry.—There are 12 minerals generally considered essential to meet the requirements of chickens: calcium, phosphorus, chlorine, iodine, iron, sulfur, sodium, potassium, manganese, magnesium, copper, and silica. Except for calcium, phosphorus, chlorine, and in rare instances iodine, the other minerals seem to be adequately provided by the common feedstuffs generally used in poultry rations. Calcium, phosphorus, and chlorine require special consideration in every ration for poultry; hence, these may well be designated as the supplemental minerals in contrast to the others which rarely, if ever, need to be supplemented. These three supplemental minerals may be indirectly supplied by high mineral animal feeds, such as meat and bone meal, fish meal, and milk, when used as the entire source of supplemental proteins; whereas a direct supplement of these minerals is necessary when vegetable protein concentrates or high protein-low mineral meat meals are used. That the constituents of a given ration determine whether the calcium, phosphorus, and chlorine are indirectly provided in adequate amounts or must be added as such is clearly indicated by the following list of feedstuffs and their approximate content of calcium, phosphorus, and chlorine.

Average Supplemental Mineral Content of the More Common Poultry Feedstuffs

Feedstuff	Calcium	Phosphorus	Chlorine
Meat and bone meal	7.0 - 9.0	2.5 - 4.0	1.5
Fish meal	5.5 - 8.0	3.0 - 4.0	2.0 - 3.0
Dried milk	1.2	0.9	0.9
Soybean oil meal	0.3 - 0.35	0.6 - 0.7	0.03
Cottonseed oil meal	0.25 - 0.30	0.9 - 1.0	0.04
Linseed oil meal	0.35 - 0.40	0.7 - 0.8	0.09
Corn, wheat, oats	0.01 - 0.06	0.2 - 0.4	0.07-0.09
Wheat bran	0.074	1.29	0.09
Wheat middlings	0.064	0.92	0.08
Bone meal	24.0	14.9
High calcium limestone	36.0	-38.0
Oyster shells	38.0

It is self evident that when the animal feeds, such as meat and bone meal (50-55 per cent protein), fish meal, or milk, are used in the customary proportions to supply the entire source of supplemental protein, adequate amounts of calcium, phosphorus, and chlorine will be automatically provided to meet the requirements, except for egg shell formation. It is equally obvious that the vegetable feedstuffs are low in their content of supplemental minerals and require a direct mineral supplement when vegetable protein concentrates are used to replace the high mineral animal feeds, when a reduced amount of the animal feeds may be used, or when high protein-low mineral meat meals are used.

Of the three supplemental minerals, the vital

importance of sodium chloride (salt) must not be overlooked. Again Dr. Wheeler was probably the first to emphasize the necessity of salt for chickens. It was in 1890 that he reported his tests (1) with the feeding of salt to hens with apparent benefit and emphasized the fact that "salt in some quantity is a necessity to the living animal". He fed various amounts of salt up to nearly half a pint per day per 100 hens without noticeable ill effects. From later tests he concluded that 5 ounces (0.3 per cent) of salt to each 100 pounds of feed constituted a safe proportion. This amount was undoubtedly sufficient in those days when the ration was generally balanced by meat, fish, and milk products, all of which provided small amounts of salt or sodium chloride. With the recent use of vegetable protein concentrates, very deficient in chlorine, as substitutes for animal products, more salt becomes necessary—hence, the customary addition of 0.5 to 1.0 per cent salt to mash feeds for chickens. Strange as it may seem today, comparatively recent tests have been conducted with the use of vegetable protein concentrates and mineral supplements in poultry rations which proved a failure when compared with animal feeds simply because salt was not included with the other minerals, such as bone meal or limestone or a combination of both. The failure was attributed to the inferior quality of the vegetable protein; whereas the real cause was due to its deficiency in chlorine.

Kind and Quantity of Minerals.—Since special consideration needs to be given only to the three supplemental minerals, calcium, phosphorus, and chlorine, the solution of the mineral problem can be made simple and inexpensive. Sodium chloride (salt) should be added to all mash feeds for poultry regardless of age to provide the necessary chlorine. All-mash or all-in-one feed mixtures should include 0.5 to 1.0 per cent salt or sodium chloride; mash feeds to be supplemented by grain, as in the case of laying mashes, should include 1 per cent salt; and mash concentrates should contain 1.5 to 3 per cent salt—the actual amount being in proportion to the amount of other feedstuffs and grain to be added in making up the balance of the ration. With the chlorine requirements provided in this way, the calcium (lime) and phosphorus need separate consideration.

When the usual proportions of meat and bone meal or meat scraps (50-55 per cent protein), fish meal and milk are the supplemental sources of protein, no additional calcium or phosphorus may be needed, except for the oyster shells or limestone grit to supply the extra calcium requirements for layers. When vegetable protein concentrates, such as soybean oil meal, corn gluten feed or meal, linseed oil meal, cottonseed oil meal, cocoanut oil meal, or other vegetable protein concentrates, are used, there should be included 15 pounds of bone meal and 5 pounds of high calcium limestone or oyster shells for every 100 pounds of vegetable protein concentrate used. In some instances when egg production exceeds 60 per cent or when there is a tendency towards the production of weak egg shells, it may prove beneficial to add 2 per cent of chick-size oyster shells or high calcium limestone grit to the mash for layers.

Since bone meal constitutes such an important source of calcium and phosphorus, the kind and form of bone meal deserve consideration. Special steamed bone meal for poultry and livestock feeding is preferable to the so-called raw bone meal for poultry which con-

tains gelatinous protein material and correspondingly less calcium and phosphorus.

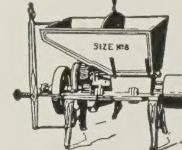
It is assumed, of course, that growing pullets and layers also have free access to oyster shells or high calcium limestone grit. By high calcium limestone for use in poultry rations or as a limestone grit in place of oyster shells is meant a 36 to 38 per cent calcium or 90 to 95 per cent calcium carbonate limestone.

Since the addition of the proper amount of calcium and phosphorus to a ration deficient in these elements will produce such phenomenal results, there is a temptation to think that if such a small addition proves so beneficial an increased quantity should prove still better. However, it should be emphasized that a needless excess of minerals may prove as harmful as a deficiency or more so. This gives rise to the question of what is the proper amount of these elements and the desired proportion of calcium to phosphorus? The total calcium and phosphorus in a ration, excluding shells or limestone grit for layers, needed to meet the requirements of chickens will generally be from 1.0 to 1.5 per cent calcium and 0.6 to 1.0

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Cottonseed Cake v. Linseed Oil Cake

Linseed oil cake and cottonseed cake are generally considered the two standard protein supplements for cattle-fattening rations.

In a 2-year comparison using cottonseed cake and linseed oil cake in a ration of barley, dried pulp, corn silage, and alfalfa, cottonseed cake produced slightly greater and cheaper gains. The same conditions were true when cottonseed cake and linseed oil cake were used in a standard beet by-product ration of corn, barley, wet beet pulp, and alfalfa hay.

Each ton of linseed oil cake used in the silage ration replaced 1,995.90 pounds of cottonseed cake but required 77.87 pounds more barley, 122.95 pounds more dried beet pulp, 1,401.64 pounds more silage, and 266.39 pounds more alfalfa hay; or with feed prices used was worth \$27.15 per ton.

In the wet beet pulp ration, each ton of linseed oil cake replaced 1,986.87 pounds of cottonseed cake and 258.21 pounds of alfalfa but required 35.01 pounds more corn, 35.01 pounds more barley, and 166.30 pounds more wet beet pulp; or was worth \$33.04 per ton.

It is true that linseed oil cake enhanced both dressing percentage and carcass grade in the silage ration, but there was no difference in the selling price. In the beet by-product ration, the 1-year data available shows cottonseed cake to be more desirable from the standpoint of carcass grade and dressing percentage. —Bull. 422. Colorado Exp. Sta.

A suit attacking the windfall tax on processors was filed Aug. 6 by Kingan & Co., packers, of Indianapolis. The petition sets forth that it is the same old unconstitutional tax by a new name.

Vitamin A and Carotene

By J. S. HUGHES, of Kansas State College

Vitamin A in the purest form so far obtained is an oily liquid with a slightly yellow color. It has not been prepared in pure crystalline form, so its exact structure is not known.

The vitamin A required for the normal function of the animal body may be furnished as such in feed, or it may be made in the animal from one of the provitamins A.

Four of the known carotenoid pigments found in plants may be converted in the animal body into vitamin A. They are the three carotenes, known as alpha carotene, beta carotene, and gamma carotene, and hydroxy-beta carotene, known as kryptoxanthine. These are all reddish yellow, crystalline compounds which are similar to each other in chemical structures. Other carotenoids do not yield vitamin A when fed to animals.

When a molecule of beta carotene breaks in two in the middle, each half becomes a molecule of vitamin A by the addition of one hydrogen and one hydroxyl group. When the other three provitamins A are converted into vitamin A, only one half of the molecule serves for this purpose, so beta carotene has twice the vitamin A potency of the others.

Vitamin A has not been found in plant tissue. It is found in animal products such as liver, egg yolk, butter fat and in small amounts in body fats. The amount of vitamin A stored in these animal products depends on the vitamin A potency of the feed which the animal consumes.

Beta carotene, along with other yellow pigments and the green pigment chlorophyll, is found in all green leaves. It accounts for practically all the vitamin A potency of forage crops. It also occurs in yellow roots and in some grains, but there is very little in yellow corn. It constitutes most of the yellow pigment in butter fat.

A very small amount of alpha carotene and gamma carotene is found in leaves, roots and some grains.

Kryptoxanthine is responsible for most of the vitamin A potency of yellow corn.

per cent phosphorus with a calcium-phosphorus ratio of 3:2 to 2:1.

In certain sections where the iodine content of the soil is low, there is a possibility, in rare instances, of the grains and feedstuffs from these soils being low in iodine and insufficient to meet the requirements of chickens. The use of oyster shells and fish oils which supply some iodine will generally correct such a deficiency; otherwise, the use of iodized salt will adequately meet the requirements. As for iron and sulfur, there seems to have been no experimental evidence secured to indicate any need for the use of additional or supplemental iron or sulfur in poultry rations.

Representatives of grain exchanges in different cities held a conference at Chicago Aug. 19 on a test of the validity of the Commodity Exchange Act. They have retained as counsel the law firm of Townley, Wild, Campbell & Clark; but no definite steps have been taken. Robert Boylan, pres. of the Chicago Board of Trade, stated that the Chicago Board plans no action of that sort.

Laboratory Tests Insure Uniform Feeds

In an 18x28 ft. triangular space in one corner of the plant of McLaughlin, Ward & Co., Jackson, Mich., Chemist Nat Clauss works steadily with grinders, test tubes, flames and chemicals, constantly checking the analyses of the ingredients that go into the company's "Jaxon," "Wolverine," and "Sterling" branded feeds. With the growth in the volume of its feed business the company has added this laboratory to its facilities in the interest of uniformity.

Samples are drawn from every carload of cottonseed meal, soybean meal, meat scrap, fish meal and countless other feed ingredients purchased, and these samples are checked against the declared analysis. This checking detects variations, up or down, enabling the company to make corrections in its formulas and to give uniform feeds in accordance with predetermined analyses. In turn, each lot of feed, as it is manufactured, is checked against its predetermined analysis, so that it may be mixed over again to meet exacting standards, if that is necessary, before the feed leaves the plant.

This double checking of the analyses of the ingredients and of the completed feeds prevents variations in protein, fat, fibre, ash, and carbohydrates which might tend to destroy uniformity, and is the company's insurance that its feeds will produce equal results under equal conditions.

A good volume of business is necessary to support a laboratory. The 40-year-old McLaughlin, Ward company does a thriving business throughout the southern half of Michigan.

Firms unable to support laboratories of their own, would do well to make use of the many commercial laboratories throughout the country that perform analytical services. Only the services of a chemist will insure uniform feeds that can be depended upon to give the same results when fed under similar conditions.



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Sentry Packing Co., Stockton, Cal., the word "Sentry" and representation of a dog's head, No. 380,023, for dog and cat food.

Shafer-Haggart, Ltd., Vancouver, B. C., the words "Four Star," No. 366,378 for fish-meal, alfalfa meal, fish oil and whale oil for stock feeding.

Old Fort Mills, Inc., Marion, O., the representation of a covered wagon and words "Old Fort" as trade-mark No. 370,930 for live stock and poultry feed.

Philip R. Park, Inc., San Pedro, Cal., the representation of cattle ranging on a sea bed and the words "Cattle Manamar," No. 377,995, for stock feed.

Sea Board Supply Co., Philadelphia, the representation of sun rising from the sea and the word "kel-sea-cal," No. 374,095 for feed for cattle, hogs and poultry.

P. W. Gillibrand, Santa Susana, Cal., the words "Tapo brand Shell" and the representation of a ship, No. 375,937, for decomposed oyster shell used for chicken feed.

Blatchford Calf Meal Co., Waukegan, Ill., the letters "V-D" in a cross and "Replaces Milk with Cod Liver Oil," No. 375,747, for feeds for use in making poultry or animal feeds.

A. A. Young Laboratories, Inc., Chicago, the word "Min-o-lac," No. 373,153, for concentrated food derived from cow's milk with added vitamin for horse, dog and other animal feed.

Standard Label for Linseed Meal

To identify participating member companies of the Linseed Meal Educational Committee to feeders and feed dealers, the executive board of the Committee at a meeting in Milwaukee rec-



ommended the adoption of a standard method of labeling linseed meal bags with the official triangle trade-mark of the group.

The proposal calls for a standardized trade-mark position on all 100-pound sacks of linseed meal. The triangle trade-mark is to be placed at the bottom of the bag, flanked by a distinguishing red band which extends to the side seams of the bag.

Exports of Canadian wheat to the United States in the crop year ended July 31 totaled 50,167,705 bus., compared with 25,894,124 bus. in the preceding season.

Counties in which relief to drouth-stricken farmers is authorized by the government were increased to 268 July 8. From those counties reduced freight rates will be available for movement of cattle before Sept. 2.

Early Grain Inspection at Toledo

Notes taken largely from the minutes of early Toledo trade organizations, by H. F. Prue, Toledo federal grain supervisor, furnish an authentic if not a continuous record of early inspection in Toledo, O.

Inspection had previously been established in Chicago (1856), Milwaukee (1858) and Detroit (1858), and according to the records, Toledo was the fourth market to establish an organized inspection service. The Chicago Board of Trade was organized in 1848. On June 5 of the following year, a number of men engaged in merchandising grain, live stock and lumber met in Toledo and formed the Toledo Board of Trade. Eleven years later (1860) Simeon Felch was appointed grain inspector and apparently held this position until 1865.

In December, 1865, at a meeting of the Toledo Board of Trade, an organization called the Pork and Provision Exchange was established. It is not clear from the records whether this was a branch of the then Board of Trade, or whether it was an organization supplanting the parent body. At the first meeting of this newly formed organization the records show the following: "Resolved: That the Pork and Provision Exchange recommend to the common council of city that Henry Breed receive the appointment of provision inspector." According to the records the inspection of grain was a part of Mr. Breed's several duties.

The January, 1868, minutes indicate that A. Godard was chief inspector for this same organization. The records of this year are particularly clear. They show that Mr. Godard had a deputy inspector located at each one of the numerous elevators and warehouses. The deputy inspector acted as custodian of this wheat until such time as it was loaded out.

A case brought before the "committee of reference" indicated that it was a common practice for a country shipper or a local dealer to "shop around" at the different elevators with a sample of wheat in order to determine at which one he could secure the highest grade.

On Jan. 8, 1876, the representatives of sixteen firms met "for the purpose of forming a new Board of Trade." The name of this organization was to be the Toledo Produce Exchange. At the meeting of this new organiza-

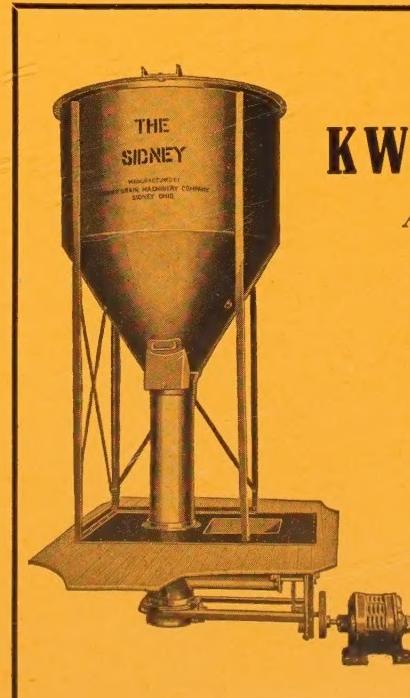
tion held Jan. 31, 1876, Mr. A. Godard was elected chief inspector at a salary of \$2,500 per year. This amount was reduced the following month to \$2,000 a year. An attorney was engaged for the purpose of "preparing rules and regulations for the inspectors, together with the procurement of a proper seal." Bond for the inspectors was fixed at \$5,000. Mr. Godard selected five deputies to aid him in his work, the salary of three to be at the rate of \$60 per month and two at \$50. The schedule of inspection fees was 25c per car in and out and 75c for canal boats. According to the secretary's record \$8,000 was collected for inspection fees in February. The records do not indicate the period this covered.

Two other persons held the position as chief inspector at Toledo prior to the appointment in the late 1800's of E. H. Culver. Mr. Culver was nationally recognized as an authority on grain inspection. The records of the Grain Dealers National Ass'n show that as early as 1904 Mr. Culver was engaged in working out uniform grades to be used by the trade generally.

A high price for barley on this crop was made Aug. 20 at Chicago when a fancy car sold for \$1.43 per bushel.

Drouth of even greater intensity than 1936 is now promised by the Smithsonian Institute for 1937 and 1938. The champions of scarcity will be delighted with this.

Indicated wheat supplies for 1936-37 are the smallest since 1925-26. If the supply estimate is approximately correct and the rate of disappearance in the last four years is maintained, stocks at the end of the season will be extremely low. As long as crop deterioration continues, speculative waves may push prices still higher. However, if further material reductions in world supply prospects do not occur, it is probable that British prices are making a crop scare peak and are above the average level likely to prevail during the season. The same probably is true of North American markets. In the past, August has tended to be a period of weakness in wheat prices, especially following marked advances in June and July. Marketing of new crops in the United States, Canada and Europe makes liberal current market supplies. Influence of crop scares usually wanes as the wheat growing season ends in the northern hemisphere and southern hemisphere crops are dormant.—Gilbert Gusler, statistician Millers National Federation.



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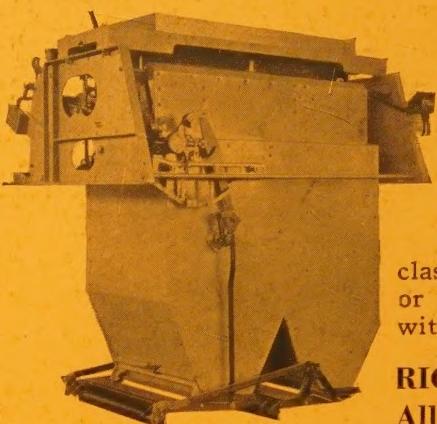
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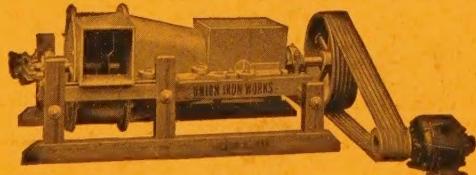
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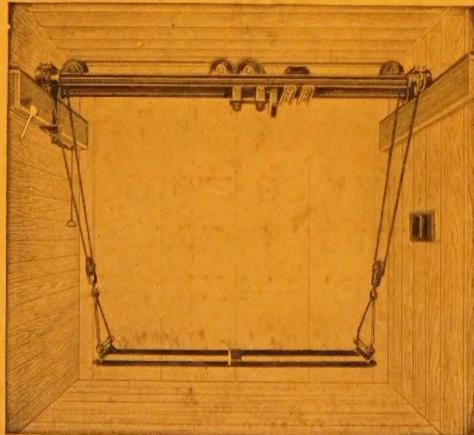
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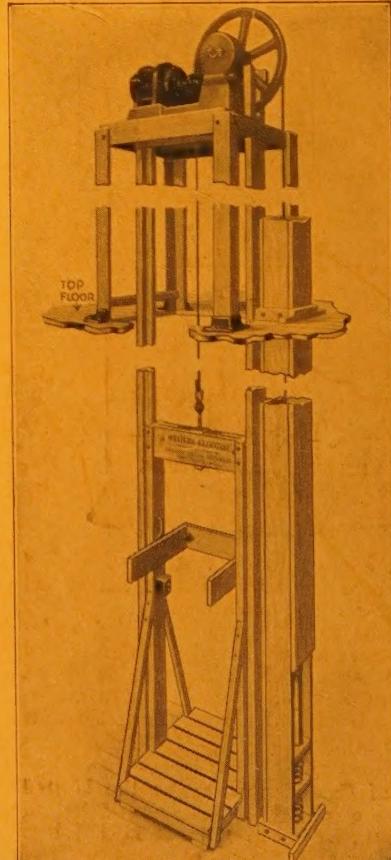
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